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Protecting Texas
by Reducing and
Preventing Pollution

Preliminary Assessment/ Screening Site Inspection Report

for

Trinity Valley Iron & Steel Company
TXD980626048
Fort Worth, Tarrant County, Texas

Prepared in cooperation with the
U.S. Environmental Protection Agency

August 1997

PRELIMINARY ASSESSMENT/SCREENING SITE INSPECTION REPORT

Trinity Valley Iron & Steel Company
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Prepared by

Emergency Response and Assessment Section
Site Discovery and Assessment Program
Austin, Texas

August 1997

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The State predecessor agencies: Texas Water Quality Board (TWQB), Texas Department of Water Resources (TDWR), Texas Water Commission (TWC), and Texas Air Control Board (TACB), referred to throughout this report are now known as the Texas Natural Resource Conservation Commission (TNRCC). The new agency, TNRCC, became effective September 1, 1993, as mandated under State Senate Bill 2 of the 73rd Regular Legislative Session.

SECTION 1

INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) through a multi-site cooperative agreement with the U.S. Environmental Protection Agency (USEPA) has been tasked to conduct a Screening Site Inspection at the at the Trinity Valley Iron & Steel Company (TVI) facility, EPA Identification number TXD980626048. The TVI facility operated as a grey iron and ductile iron foundry from 1924 until the company discontinued operations in 1988. The facility produced water main fittings. As part of the foundry processes, waste sand (foundry sand), slag, metal grindings, and lead and cadmium containing furnace emissions were produced. (Reference 3).

This report details site background information, field activities, and analytical results of the Site Screening Investigation (SSI) performed by TNRCC for EPA Region VI. Field activities, conducted on April 8, 1997, included site reconnaissance and sample collection. Photographs and copies of field book notes taken during the SSI field event are located in Appendix A and Appendix B, respectively. Analytical data sheets and EPA CLP data review from the samples collected at the site during the SSI are presented in Appendix C.

The information gathered for this SSI was obtained from several sources, including state and federal files, as well as numerous publications. A complete list is provided in the reference section.

SITE OBJECTIVE WITH RESPECT TO THE PREREMEDIAL PROCESS

The Preremedial stage of the Superfund process involves an expanded preliminary assessment (PA) and a site inspection (SI) stage consisting of an SSI and, if necessary, a listing site inspection (LSI). The activities described in this work plan are designed to fulfill the requirements of a focused SSI.

This SSI will collect data through background information research and the collection of environmental samples to further characterize conditions at the site. Sampling conducted during the SSI was designed to identify the types of contaminants present, if any, to assess whether a release of hazardous substances has occurred, look for evidence of actual human and environmental exposure to contaminants, and determine whether the site will move forward to an LSI or be designated as "no further remedial action planned."

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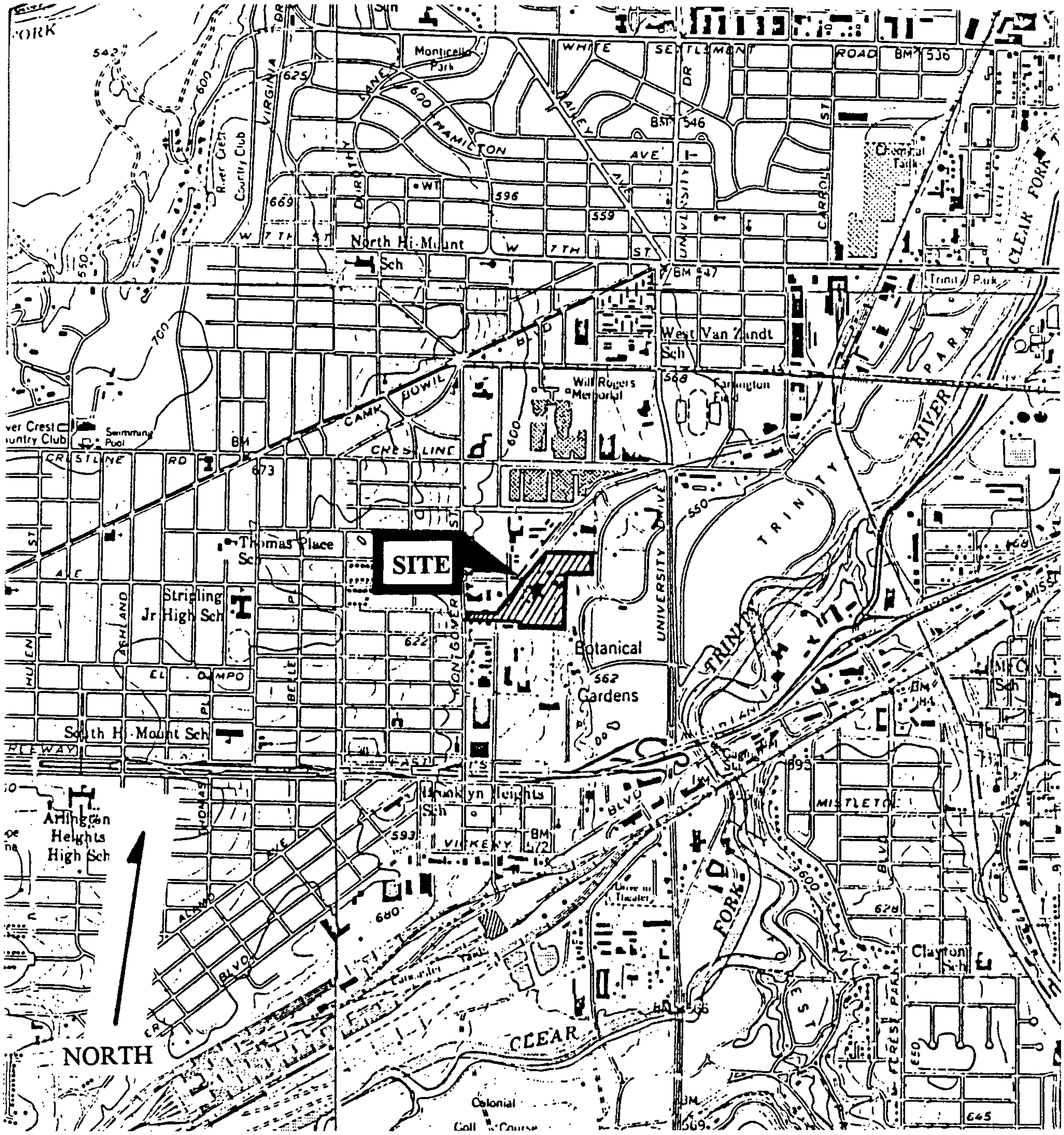
SECTION 2
SITE BACKGROUND AND DESCRIPTION

Site Information

The TVI site is located in Tarrant County at 3400 Bryce, Fort Worth, Texas (Figure 1). The inactive site, currently owned by McWayne,Inc., occupies approximately 16 acres of in the vicinity of University Drive and Bryce Avenue. The site is located at approximately 32^0 44' 20'' north latitude and 97^0 22' 10'' west latitude. The Fort Worth Botanical Gardens borders the property to the east. Sometime after 1990 (exact time unknown) the owners of the facility removed all physical structures and buildings of the facility and began leasing the property to the Southwestern Exposition and Livestock Show for automobile parking.

TVI operated a grey iron foundry from 1924 until 1988. The site, covering approximately 15 acres, is inactive. The foundries process would remelt scrap metals in a cupola furnace to produce new cast iron products (Reference 3). Until 1984, slag was drawn off the top of the molten metal and drummed. After 1977, emissions from the cupola furnace were fed to a baghouse. The ash or dust from the baghouse was removed for disposal on-site in a landfill. The landfill was closed in accordance with an TNRCC approved closure plan in 1986, with TNRCC closure acceptance being granted for the closure on December 16, 1988 (Reference 4 & 5).

The field book notes for the PA, conducted April 8, 1997, are located in Appendix B and address the air, groundwater, and surface water exposure pathways of concern. Discussion of these pathways is summarized in the following sections.



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Fort Worth, Texas

EPA ID# 980626048

Figure 1

Site Location Map

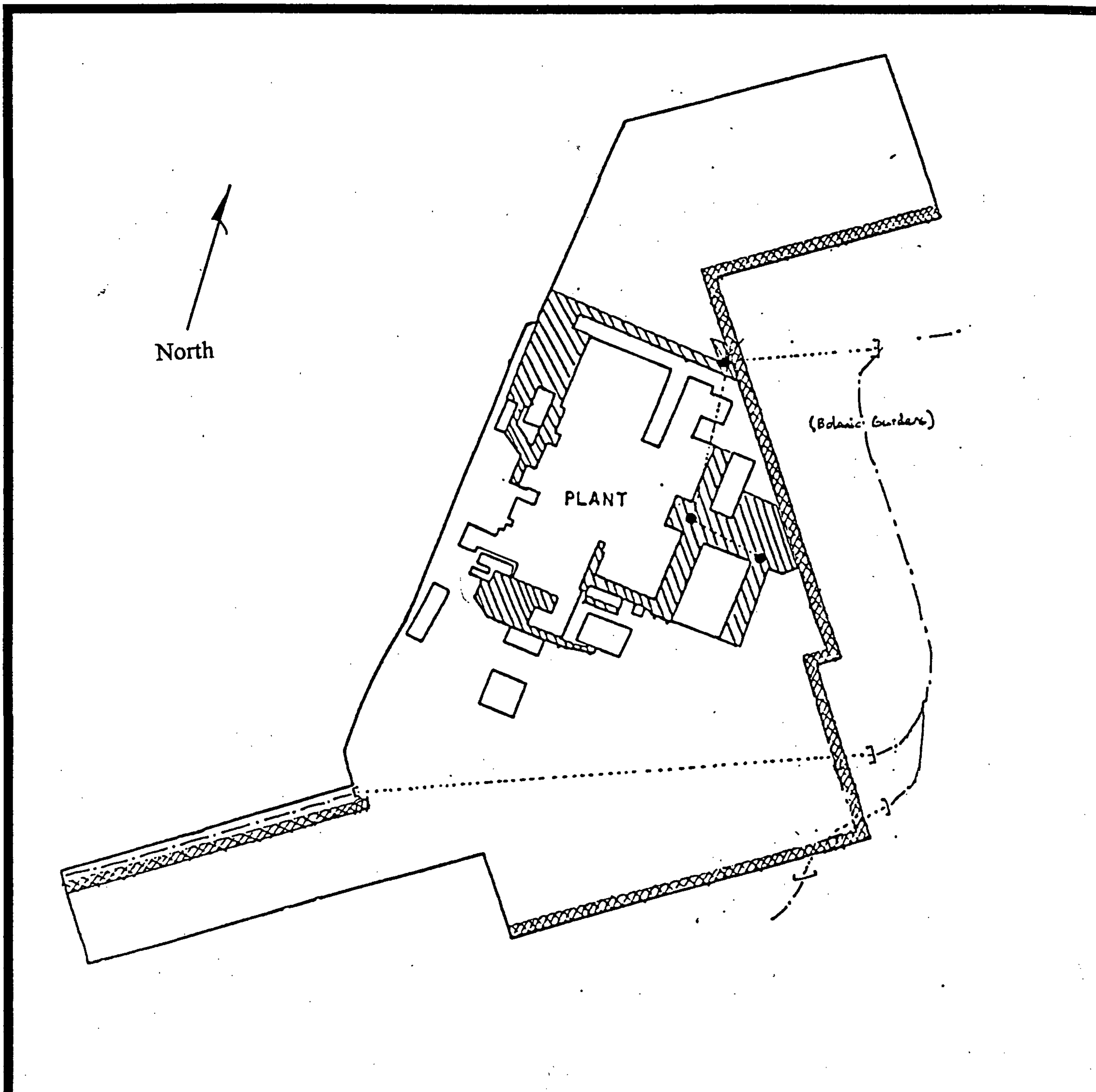

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Figure 2

Site Features Map

North

Not To Scale

Note: Plant Structures Removed in 1990

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Trinity Valley Iron

Fort Worth, Texas

EPA ID# 980626048

Figure 2

Site Features Map

OPERATIONAL HISTORY SUMMARY

TVI operated a grey iron foundry from 1924 until 1988. The site, covering approximately 15 acres, is inactive. The foundries process would remelt scrap metals in a cupola furnace to produce new cast iron products (Reference 3). Until 1984, slag was drawn off the top of the molten metal and drummed. After 1977, emissions from the cupola furnace were fed to a baghouse. The ash or dust from the baghouse was removed for disposal on-site in a landfill. The landfill was closed in accordance with an TNRCC approved closure plan in 1986, with TNRCC closure acceptance being granted for the closure on December 16, 1988 (Reference 4 & 5).

While in operation the facility utilized drums filled with foundry waste (slag and shot-blasts fines) as bulkheading for fill material. The fill material consisted of foundry sand and shot-blast fines. This construction method was utilized to build up the eastern and southern portions of the property. The drums are stacked seven layers high (approximately 21 feet) and two and three rows deep. The approximate total linear feet of the drum/foundry waste wall structure is 2,467 feet. An exact estimate of the slag, shot-blast fines, and foundry for sands is unknown. Findings during a November 1987 Sampling Visit Report conducted by A. T. Kearney, Inc., for the EPA indicated that the shot-blast fines and foundry sands contain concentrations of napthalene, xylene, and phenols (Reference 3). Following a site visit by TNRCC personnel on October 16, 1996, the pathway of concern is the surface water pathway by human food chain target (fishery) on the Clear Fork Trinity River.

Waste Containment/Hazardous Substance Identification

The information used to identify the waste characteristics at the TVI site was obtained from a review of the Sampling Visit Report and a TNRCC site visit in October 1996 (Ref.3 & 14). During site operations, there were various Solid Waste Management Units (SWMUs) that were used to dispose/handle process wastes. In 1988 the facility stopped operations and soon dismantled and removed all structures of the facility. Following the site reconnaissance conducted by TNRCC in October 1996 the facility was identified to have one potential waste source area where hazardous substances were either used, stored, or spilled at the TVI facility: This "area of concern" is;

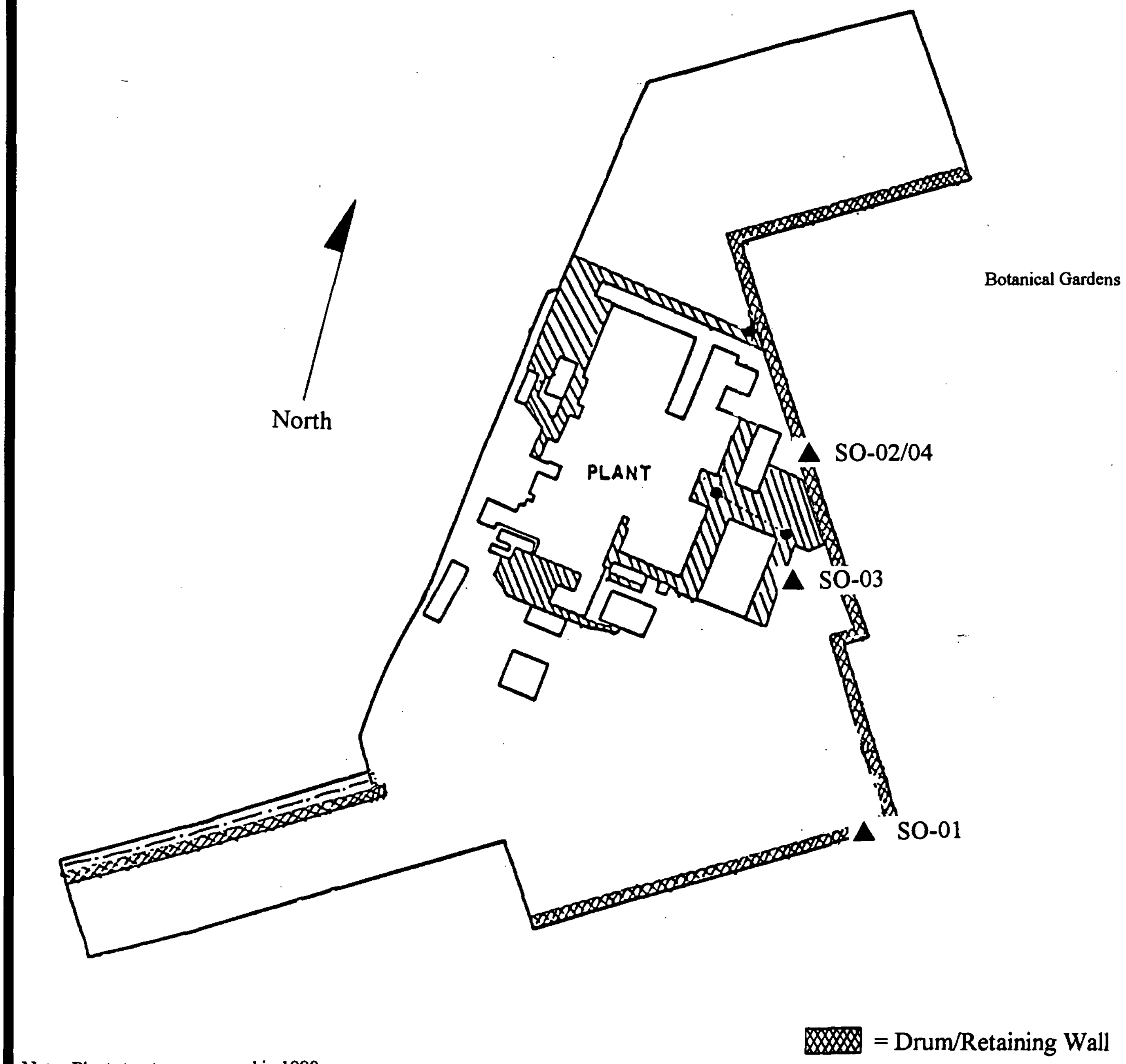
> Retaining Wall/Fill Area (slag, shot blast fines, foundry sand) - Throughout the operational lifetime of the facility the southeast portions of the property was backfilled over twenty-feet. A retaining wall was constructed with 55-gallon drums filled with foundry wastes including slag, shot blast fines, and foundry sands (Reference 3). The area behind the retaining wall was filled with foundry sands up to grade with the rest of the facility. The approximate total linear feet of the drum/foundry waste wall structure is 2,467 feet. An exact estimate of the slag, shot-blast fines, and foundry form sands is unknown.

Samples collected from the retaining wall/fill area are listed in Table 1 and can be seen in Figure 3.

Table 1. Source/Waste Area Characterization Sample Locations

Sample Matrix	Sample ID #	Data Type	Sample Location
Soil	SO-01	CLP	Retaining Wall/fill area - east end of south wall
Soil	SO-02	CLP	Retaining Wall/fill area - south end of east wall
Soil	SO-03	CLP	Retaining Wall/fill area - north end of east wall
Soil	SO-04	CLP	Retaining Wall/fill area - Duplicate SO-02

To address the contaminants of concern, EPA-stipulated Contract Laboratory Program (CLP) analytical methods were requested on collected samples. A formal list of these analytical methods is specified under the CLP routine analytical services (RAS) contract. CLP methods cover a wide range of analytes, including priority pollutant volatile and semivolatile organic compounds, metals, pesticides, polychlorinated biphenyls (PCBs), and cyanides.



Note: Plant structures removed in 1990.

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Figure 3

Source Sample Location Map

A summary of compounds detected at elevated concentrations in the source area samples can be seen in Tables 2.1 and 2.2 below.

Table 2.1 Inorganics Detected at Elevated Concentrations in Source Area Samples

Observed Contamination in On-Site Soil Source Samples						
Inorganics mg/Kg	MFHE95 SO-1 [SQL]	MFHE96 SO-2 [SQL]	MFHE97 SO-3 [SQL]	MFHE98 (Dup. SO-2) SO-4 [SQL]	MFHE99 (Bkgd) SO-5 [SQL]	CRDL mg/Kg
Antimony		22.9 [0.44]		22.4 [0.45]	0.87UC	12
Cadmium		1.7 [0.22]		3.1 [0.22]	0.24U	1
Chromium		42.0J^ [0.22]		26.1J^ [0.22]	7.9J [0.24]	2
Lead	92.6 [0.22]	767 [0.22]	231 [0.21]	866 [0.22]	26.4 [0.24]	0.6
Manganese		985J^ [0.22]		892J^ [0.22]	229J^ [0.24]	3
Nickel		38.6J [0.22]		22.5 [0.22]	7.9LJ [0.24]	8
Selenium	1.3 [0.65]	3.1 [0.66]		2.5 [0.67]	0.73U	1
Silver		1.8 [0.22]		2.3 [0.22]	0.24U	2
Zinc		742 [0.22]	315 [0.21]	929 [0.22]	31.4 [0.24]	4
Cyanide				1.0 [0.9]	0.29L [0.97]	5
% Solids	91.7	90.6	94.7	88.8	82.0	

Notes:
[SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J =The value is an estimated concentration because one or more quality control criteria have not been met.
J^ =Estimated value at the reported sample quantitation limit and biased high.
L =Reported concentration is between the IDL and the CRDL.
UC =Reported concentration should be used as a raised detection limit because of apparent blank contamination.

Table 2.2 Semi-Volatiles Detected at Elevated Concentrations in Source Area Samples

Observed Contamination in On-Site Soil Samples						
Semivolatile Fraction						
Analytes µg/Kg	FFL38 SO-1 [SQL]	FFL39 SO-2 [SQL]	FFL40 SO-3 [SQL]	FFL41 SO-4 (dup.SO-2) [SQL]	FFL42 (Bkgd) SO-5 [SQL]	CRQL µg/Kg
Phenol	870J [370]	940 [370]	620 [350]	740 [360]	400U	330
Naphthalene	460J [370]	670 [370]		520 [360]	400U	330
2-Methylnaphthalene	400J [370]	490 [370]		390 [360]	400U	330
Phenanthrene		640 [370]	500 [350]		33J [400]	330
Di-n-butylphthalate			470B [347]		140BJ [400]	330
Pyrene			1100J [347]		66J [400]	330
Benzo(a)anthracene			1500 [347]		35J [400]	330
Chrysene			1600 [347]		44J [400]	330
Benzo(b)fluoranthene			3700J* [695]		69J [400]	330
Benzo(k)fluoranthene			1100 [347]		31J [400]	330
Benzo(a)pyrene			2100 [347]		44J [400]	330
Indeno(1,2,3-cd)pyrene			3700* [695]		73J [400]	330
Dibenzo(a,h)-anthracene			1000 [347]		23J [400]	330
Benzo(g,h,i)perylene			4400* [695]		69J [400]	330
% Moisture	10	11	5	9	18	

Notes: Next Page......

Table 2.2 Continued....

Notes: [SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J = The value is an estimated concentration because one or more quality control criteria have not been met.
J^ = Estimated value at the reported sample quantitation limit and biased high.
B = This result may be high biased because of laboratory/field contamination. The reported concentration is above 5x or 10x the concentration reported in the method/field blank.
* = Result shown is reported from the diluted analysis of the same sample.

Table 2.3 Pesticides Detected at Elevated Concentrations in Source Area Samples

Observed Contamination in On-site Soil Samples						
Pesticide Fraction						
Analyte ug/Kg	FFL38 SO-1 [SQL]	FFL39 SO-2 [SQL]	FFL40 SO-3 [SQL]	FFL41 SO-4 (dup. SO-2) [SQL]	FFL42 (Bkgd) SO-5 [SQL]	CRQL ug/Kg
Endosulfan sulfate	5.0J^ [3.7]		5.2J^ [3.5]	6.7J^ [3.6]	4.0U	3.3
4,4'-DDT	7.9J^ [3.7]	5.3J^ [3.5]		5.5J^ [3.6]	4.0U	3.3
Methoxychlor	37J^ [19]				21U	17.0
Endrin ketone	7.7J^ [3.7]	29J^ [19]			4.0U	3.3
gamma-Chlordane	1.9 U [1.9]	1.8 J [1.9]	1.8 U [1.8]	2.4 [1.9]	2.1U [2.1]	1.7
Aroclor-1260			73J^ [35]		40U	33.0
% Moisture	10	11	5	9	18	

Notes: [SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J = The value is an estimated concentration because one or more quality control criteria have not been met.
J^ = Estimated value at the reported sample quantitation limit and biased high.
* = Result shown is reported from the diluted analysis of the same sample.

Ground Water Pathway

Characteristics

The TVI facility is located on the Grand Prairie of the Gulf Coast Physiographic Province. The lithologic units which comprise the surficial geology of Tarrant County consist of Quaternary alluvium, and Cretaceous limestones, clays, and sands which dip eastward (Ref. 11).

The aquifers of Tarrant County are comprised of stratigraphic units of the Cretaceous age Trinity Group. The Trinity Group has a maximum thickness in Tarrant County of 1,070 feet and includes, in ascending order, the Travis Peak Formation, the Glen Rose Limestone, and the Paluxy Sand. The sands of the Trinity Group are the most important sources of ground water in Tarrant County. The Travis Peak Formation is the most productive aquifer in the county with the Paluxy Sand second in importance (Ref.11). The Cretaceous rocks lie unconformably on the strata of the Pennsylvanian Series. Below the Cretaceous-Pennsylvanian contact, no water of good quality has been found (Ref. 12)

Based upon information for water wells within a 4-mile radius of the site, usable ground water depths range from approximately 280 to 790 feet below ground surface (Ref.11,12,13).

Targets

A file review has not indicated that drinking water wells in the vicinity of the site have been contaminated by hazardous substances from the site. No documentation was found to support off-site migration of hazardous substances from on-site sources. In addition, no information was found which documented any adverse health effects reported as a result from migration of hazardous substances to subsurface drinking water from on -site sources.

No wellhead protection areas (WPA) are known to have been established within a 4-mile radius of the Trinity Valley Iron facility (Ref. 8).

During the TNRCC site visit in October 1996, all wells located within 1 mile of the site have been abandoned (Ref. 14). One active public water supply well is located within 4 miles of the TVI facility (Ref.13,14,17).

The surrounding communities within a 4-mile radius of the TVI facility are located within Fort Worth city limits. Drinking water for the Fort Worth facility is supplied by surface water obtained from the lakes along the Trinity River including; Lake Worth, Eagle Mountain, and Cedar Creek (Ref.15).

Public supply, irrigation, industrial and domestic water wells have been identified within a 4-mile radius of the site using State of Texas water well logs, TNRCC public supply maps, and wells identified during the October 1996 site visit. Wells listed as "domestic" on State of Texas water well logs were assumed to be domestic drinking water wells unless otherwise noted. The ground water target populations for domestic water wells were calculated assuming 2.6 persons per household for Tarrant County (Ref.16). Based upon this information, the following numbers of wells and populations served were defined:

- Within 0 - 0.25 miles of the site, there are no wells identified. Total population served 0.
- Within 0.25 - 0.50 miles of the site, there are no wells identified. Total population served 0.
- Within 0.50 - 1 miles of the site, there were two industrial wells and one domestic well identified. These wells were confirmed plugged during the October 16, 1996 site visit. Total population served 2.6.
- Within 1 - 2 miles of the site, there were seven industrial wells, two domestic, and one irrigation wells identified. Total population served 5.2.
- Within 2 - 3 miles of the site, there were 14 industrial wells, six domestic, one public supply well, and five irrigation wells identified. Total population served 115.6 (Ref.17).
- Within 3 - 4 miles of the site, eight industrial wells, three domestic, no public supply, and two irrigation well identified. Total population served 7.8.

All logs of wells located within 1 mile radius of the site are included as Reference 13.

No groundwater samples were collected to assess the groudwater pathway. All wells identified by state records within one mile were confirmed plugged during the October 16, 1996 TVI facility visit.

Surface Water Pathway

Characteristics

Surface runoff from the TVI facility drains into Texas Water Quality (TWQ) Segments 0829 of the Clear Fork Trinity River and 0806 of the West Fork Trinity River both of which are within the Trinity River Basin (Ref.18). The surface water runoff map can be seen in Figure 4.

The 2-year, 24-hour rainfall event in the area of the site is estimated at 4 inches with an average annual rainfall of approximately 32 inches (Ref.6,24).

The TVI facility is not located within the 100 or 500 year floodplain (Ref. 10).

<u>TWQ Segment 0829 Clear Fork Trinity</u>
The Clear Fork Trinity in-water segment comprises 2.5 miles of the 15 mile Target distance limit. The Clear Fork Trinity along segment 0829 has a total surface length of 14 miles and has a designated water uses of contact recreation, high quality aquatic habitat, and public water supply (Ref.18). The nearest gaging station located on the Clear Fork Trinity River is the Clear Fork

Trinity River At Forth Worth Station #080447500. The annual mean flow of the Clear Fork Trinity River is 149 cubic feet per second (cfs) at station #080447500 (Ref.18).

TWQ Segment 0806 West Fork Trinity
The West Fork Trinity River in-water segment comprises the remaining 12.5 miles of the 15 mile Target Distance Limit. The West Fork Trinity River along segment 0806 has a total surface length of 33 miles and has designated water uses of contact recreation, high quality aquatic habitat, and public water supply (Ref.18). Contact recreation use is not encouraged due to elevated fecal coliform bacteria levels. In 1990, The Texas Department of Health issued an aquatic life closure prohibiting the taking of fish due to elevated levels of chlordane in fish tissue (Ref.18). The annual mean flow of the WF Trinity River is 627 cubic feet per second (cfs) at a the Beach Street gaging station (nearest gaging station). The maximum annual mean flow is 2,071 cfs with an annual minimum flow of 40.1 cfs (Ref.18). No stream gages or TNRCC ambient surface water quality monitoring stations are known to operate along the TWQ Segment 0806 of the WF Trinity River (Ref.18).

Targets

The TVI facility is approximately 20 acres located just west and directly adjacent to the Fort Worth Botanical Gardens. The surface is relatively flat with a gentle sloping to the south southeast. Surface runoff from the facility drains into a seasonal creek located immediately to the east of the facility. The seasonal creek runs southeastward through the botanical gardens for approximately 0.75 miles where it then drains into the Clear Fork Trinity. The Clear Fork Trinity River is considered to be the nearest perennial surface water body to the TVI facility. The junction of the seasonal creek and the Clear Fork Trinity is identified as the Probable Point of Entry (PPE) from the TVI facility.

Figure 4 details the two Hazard Ranking System (HRS) in-water segments which comprise the surface water pathway for this site. The in-water segments extend along the Clear Fork Trinity and the West Fork Trinity Rivers from the intersection of the seasonal creek and the Clear Fork Trinity (PPE) to the end of the 15-mile surface water target distance limit (TDL).

HRS In-water Segment 1 - Clear Fork Trinity River
The Clear Fork Trinity in-water segment comprises 2.5 miles of the 15 mile Target distance limit. No drinking water intakes were identified in this segment. There is one surface water intake located along the Clear Fork 2.5 mile segment. The intake is listed as navigation usage (Ref.19). During the October 16, 1996 site visit a fishery was documented at the PPE by visual observation (including interview) of an individual fishing (Ref. 14, Appendix A,Photo 14). No known fish kills have been documented in segment 0829 of the Trinity River Basin (Ref.18). The entire 2.5 mile Clear Fork River segment is identified as containing lower perennial riverine wetland systems (Ref.20). The resources identified in TWQ Segment 0829 include recreation, and irrigation (Ref.19).

HRS In-water Segment 2 - West Fork Trinity
The West Fork Trinity River in-water segment comprises the remaining 12.5 miles of the 15 mile Target Distance Limit. No drinking water intakes were identified in this segment. There are five

surface water intakes located along the West Fork Trinity 12.5 mile segment (Ref.19). All of these intakes are identified as irrigation use withdrawal points. No known fish kills have been documented in segment 0829 of the West Fork Trinity River Basin (Ref.18). The 12.5 mile West Fork River segment is identified as containing small areas (1 to 5 acres) of lower perennial riverine and forested palustrine wetland systems (Ref.20). The resources identified in TWQ Segment 0806 include recreation, and irrigation (Ref.19).

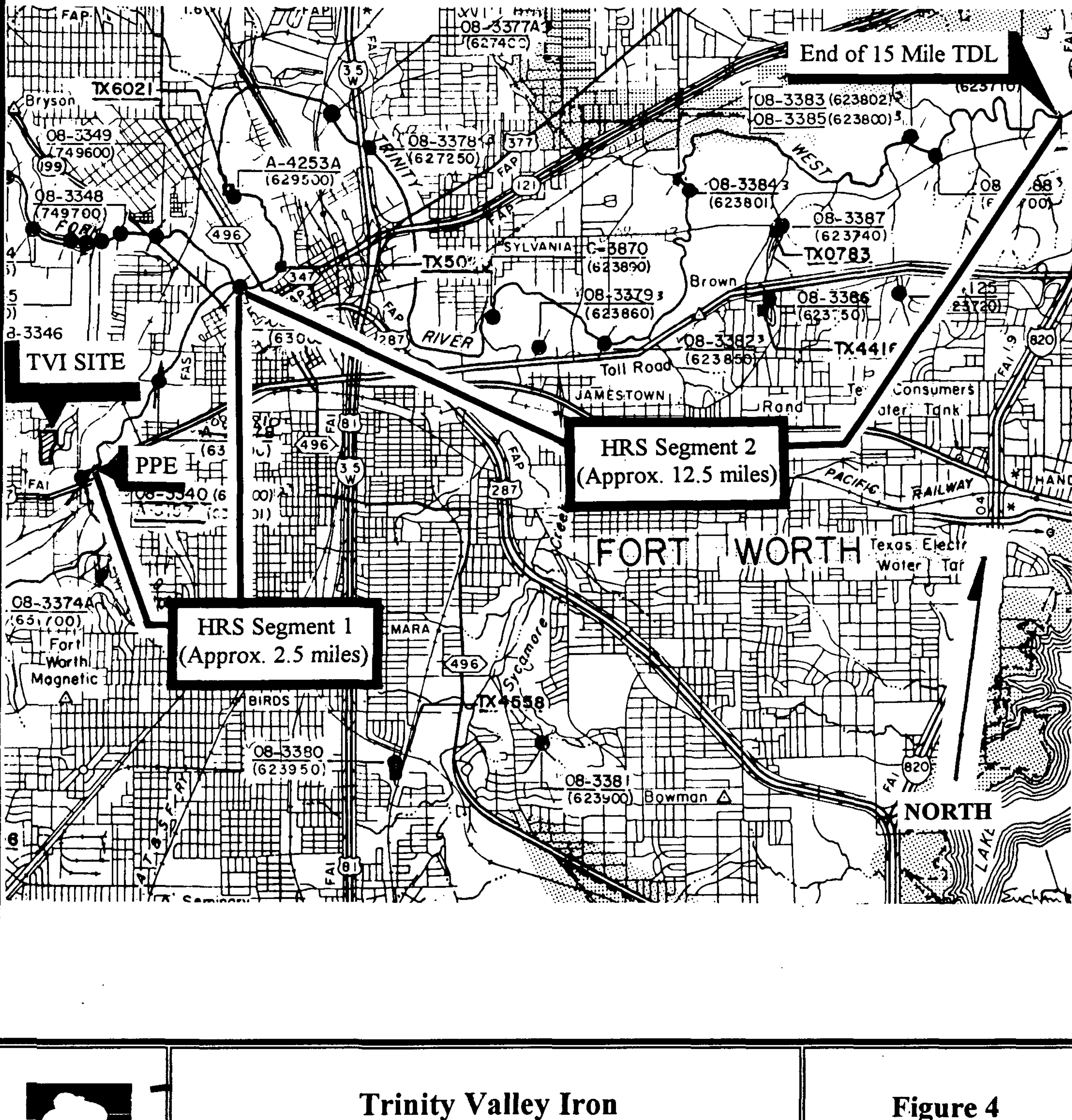

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Figure 4

Surface Water Pathway

On April 8, 1997, ten sediment samples including one duplicate sample were collected as part of this SSI. Sediment sample locations are listed in Table 3 and can be seen on Figure 4.

Table 3. Sediment Sample Locations

Sample ID #	CLP Laboratory ID #s	Sample Location
SE-01	FFL28 MFHE85	Probable Point of Entry (PPE) on Clear Fork Trinity River.
SE-02	FFL29 MFHE86	Probable Point of Entry (PPE) on Clear Fork Trinity River
SE-03	FFL30 MFHE87	Approximately 400 feet downstream of the PPE on Clear Fork Trinity River.
SE-04	FFL31 MFHE88	Approximately 200 feet upstream of the PPE on Clear Fork Trinity River.
SE-05	FFL32 MFHE89	Approximately 400 feet upstream of the PPE on Clear Fork Trinity River.
SE-06	FFL33 MFHE90	Approximately 600 feet upstream of PPE on Clear Fork Trinity River.
SE-07	FFL34 MFHE91	Approximately 50 feet from retaining wall/fill area at TVI in seasonal creek.
SE-08	FFL35 MFHE92	Approximately 500 feet downstream of SE-07 in seasonal creek.
SE-09	FFL36 MFHE93	In seasonal creek approximately 600 feet east of University Drive.
SE-10	FFL37 MFHE94	Duplicate of SE-07.

A summary of the chemical constituents detected above release criteria in sediment samples can be seen in Tables 6.1, 6.2, and 6.3. All additional analytical results not qualifying as release concentrations can be seen in Appendix C.

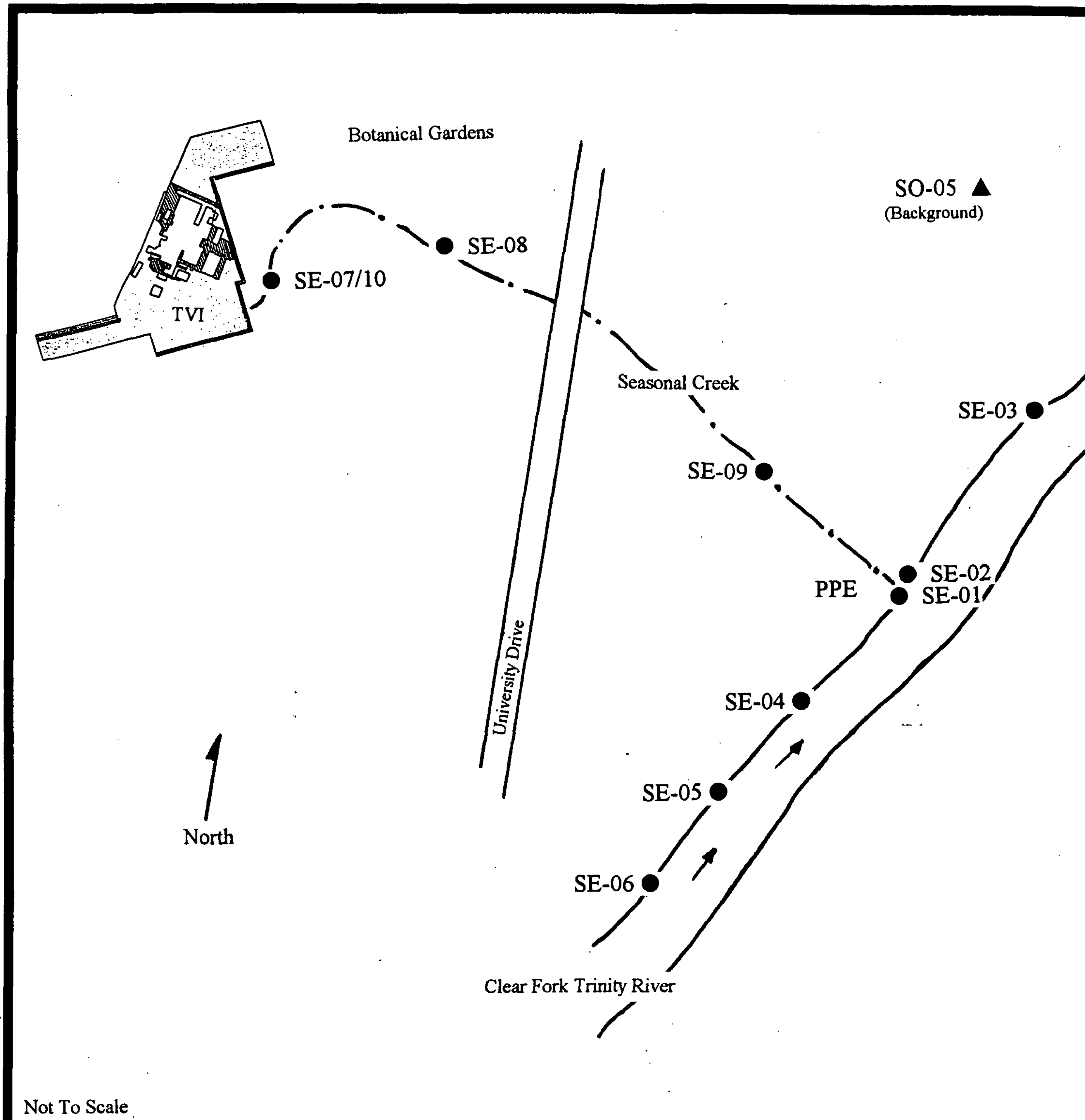

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Figure 5

Sediment Sample Location Map

Table 4.1 Chemical Releases Detected in Sediment Samples (Semi-Volatile Fraction)

Releases and Highest Background in Sediment Samples							
Semivolatile Fraction							
Analytes µg/Kg	FFL29 SE-2 [SQL]	FFL34 SE-7 [SQL]	FFL35 SE-8 [SQL]	FFL37 SE-10 (dup SE-7) [SQL]	FFL32 (Bkgd) SE-5 [SQL]	FFL33 (Bkgd) SE-6 [SQL]	CRQL µg/Kg
Naphthalene	560 [470]				480U		330
2-Methylnaphthalene	1000 [470]				480U		330
Phenanthrene		2900* [825]	730 [410]	2900 [370]		31J [420]	330
Pyrene	540 [470]	3600J* [825]	980J [410]	3000J [370]		70J [420]	330
Benzo(a)anthracene		2600 [410]	560 [410]	2000 [370]		28J [420]	330
Chrysene		3000 [410]	690 [410]	1800 [370]		47J [420]	330
Benzo(b)fluoranthene		2900 [410]	670J [410]	2300 [370]		53J [420]	330
Benzo(k)fluoranthene		840 [410]		630 [370]		21J [420]	330
Benzo(a)pyrene		2000 [410]	480 [410]	1300 [370]	480U		330
Indeno(1,2,3-cd)pyrene		2400 [410]	680 [410]	1400 [370]	480U		330
Dibenzo(a,h)-anthracene		590 [410]			480U		330
Benzo(g,h,i)perylene		2200 [410]	650 [410]	1300 [370]	480U		330
% Moisture	30	20	20	12	31	22	

Notes: [SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J = The value is an estimated concentration because one or more quality control criteria have not been met.
* = Result shown is reported from the diluted analysis of the same sample

Table 4.2 Chemical Releases Detected in Sediment Samples (Pesticide Fraction)

Releases and Highest Background in Sediment Samples									
Pesticide Fraction									
Analyte ug/Kg	FFL28 SE-1 [SQL]	FFL29 SE-2 [SQL]	FFL34 SE-7 SQL]	FFL35 SE-8 [SQL]	FFL36 SE-9 [SQL]	FFL37 SE-10 (dup.SE-7) [SQL]	FFL31 (Bkgd) SE-4 [SQL]	FFL32 (Bkgd) SE-5 [SQL]	CRQL ug/Kg
Endosulfan sulfate				4.2J^ [4.1]				4.8U	3.3
4,4'-DDT		5.9J^ [4.7]		7.3J^ [4.1]		5.5J^ [3.7]	4.3U		3.3
Methoxychlor				53J^ [4.1]				25U	17.0
Endrin ketone				8.1J^ [4.1]				4.8U	3.3
gamma-Chlordane	2.3 [2.2]	2.7 [2.4]	9.1 [2.1]	8.0 [2.1]	3.1 [2.2]	9.2 [1.9]	.37 J [2.2]	2.5U [1.5]	1.7
Aroclor-1260	56 [42]		340J^ [41]					48U	33.0
% Moisture	21	30	20	20	22	12	24	31	

Notes: [SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J = The value is an estimated concentration because one or more quality control criteria have not been met.
J^ = Estimated value at the reported sample quantitation limit and biased high.
N = Identification is tentative.

	FFL 33 SE-06 BACK	FFL 30 SE-03 DOWN
gamma chlord	.86 J [2.2]	.17 J [2.2]

Table 4.3 Chemical Releases Detected in Sediment Samples (Inorganic Fraction)

Releases and Highest Background in Sediment Samples					
Inorganics mg/Kg	MFHE85 SE-1 [SQL]	MFHE92 SE-8 [SQL]	MFHE94 SE-10 [SQL]	MFHE89 (Bkgd) SE-5	CRDL mg/Kg
Cadmium			0.46L [0.23]	0.32U	1
Chromium		29.7J^ [0.24]	99.6J^ [0.23]	8.9J [0.32]	2
Manganese		1370J^ [0.24]		329J [0.32]	3
Nickel		31.4J [0.24]	29.3J [0.23]	7.4LJ [0.32]	8
Silver	0.55L [0.26]			0.32U	2
% Solids	74.6	83.4	85.6	62.3	

Notes: [SQL] = Sample quantitation limit is presented in brackets for convenience.
U = Analyte concentration undetected at the reported sample quantitation limit
J = The value is an estimated concentration because one or more quality control criteria have not been met.
J^ = Estimated value at the reported sample quantitation limit and biased high.
L = Reported concentration is between the IDL and the CRDL.

Analysis of sediment samples for CLP metals and cyanide were performed by SWOK Laboratories of Broken Arrow, Oklahoma. Volatiles, semivolatiles, and pesticides were analyzed by Datachem Laboratories of Salt Lake City, Utah.

Soil Exposure Pathway

Characteristics

All structures at the inactive facility were removed in 1990 by the owners, McWayne, Inc.. The area is dominantly paved with areas of cement foundations (Ref. 14). The area is fenced on the north, and west sides of the property (Ref. 14). The unfenced eastern and souther portions of the property is bordered by the Fort Worth botanical gardens. The facility area is periodically used as a parking area for the Southwestern Exposition and Livestock Show facility located to the north of the facility. Surrounding land use is commercial (Ref. 14).

The TVI facility is located on a generally level area with a mild sloping to the south and east towards the botanical gardens. The facility area is defined by urban land consisting of areas that are 85 to 100 percent works and structures, such as office buildings, hotels, railroad yards, airports, streets, sidewalks, and paved parking areas (Ref. 21). Areas not included in the urban land class is covered by fill material that have been altered and obscured to the extent that they can not be classified (Ref. 21). Rainfall runoff in these areas reaches major drains rapidly.

The offsite runoff pattern is to the east and southeast into a seasonal creek that transects the Fort Worth Botanical Gardens. The seasonal creek then empties into the Clear Fork Trinity River.

Targets

The site is currently an inactive facility with no known on-site residents and or workers. As stated earlier the facility area is periodically used as parking areas for a local public recreation area (Ref. 14). There are no schools, day care centers, or residents within 200 feet of the site (Ref. 14).

There are no endangered species or terrestrial sensitive environments located on an area of observed contamination (Reference 7 & 14). The Fort Worth Botanical Gardens (park) is located immediately to the east of the facility.

No soil samples were collected to characterize the off-site migration pathway.

Air Pathway

Characteristics

The wind roses for the Dallas-Fort Worth International Airport, located approximately 20 miles to the northeast, is presented in Figure 4. Winds are predominately from the south-southeast, south and south-southwest, approximately 33% of the time, and wind speeds are generally less than 10 knot (11.5 MPH) approximately 60% of the time (Ref.22).

There are no records of air monitoring conducted at the TVI facility. In addition, no analytical data was found which documented off-site migration of airborne hazardous substances from on-site sources and no information was found which documented any adverse health effects reported as a result from migration of hazardous substances through the air from on-site sources.

Targets

The TVI site is currently an inactive facility. The population estimates from 0 to 4 miles were calculated using a house count from a U.S.G.S. topographic map and a U.S. Census data book for 1994. The populations from 1 to 4 miles were taken from the Geographical Exposure Modeling System (GEMS) database (Reference 9). Based on this information the following population estimates were defined:

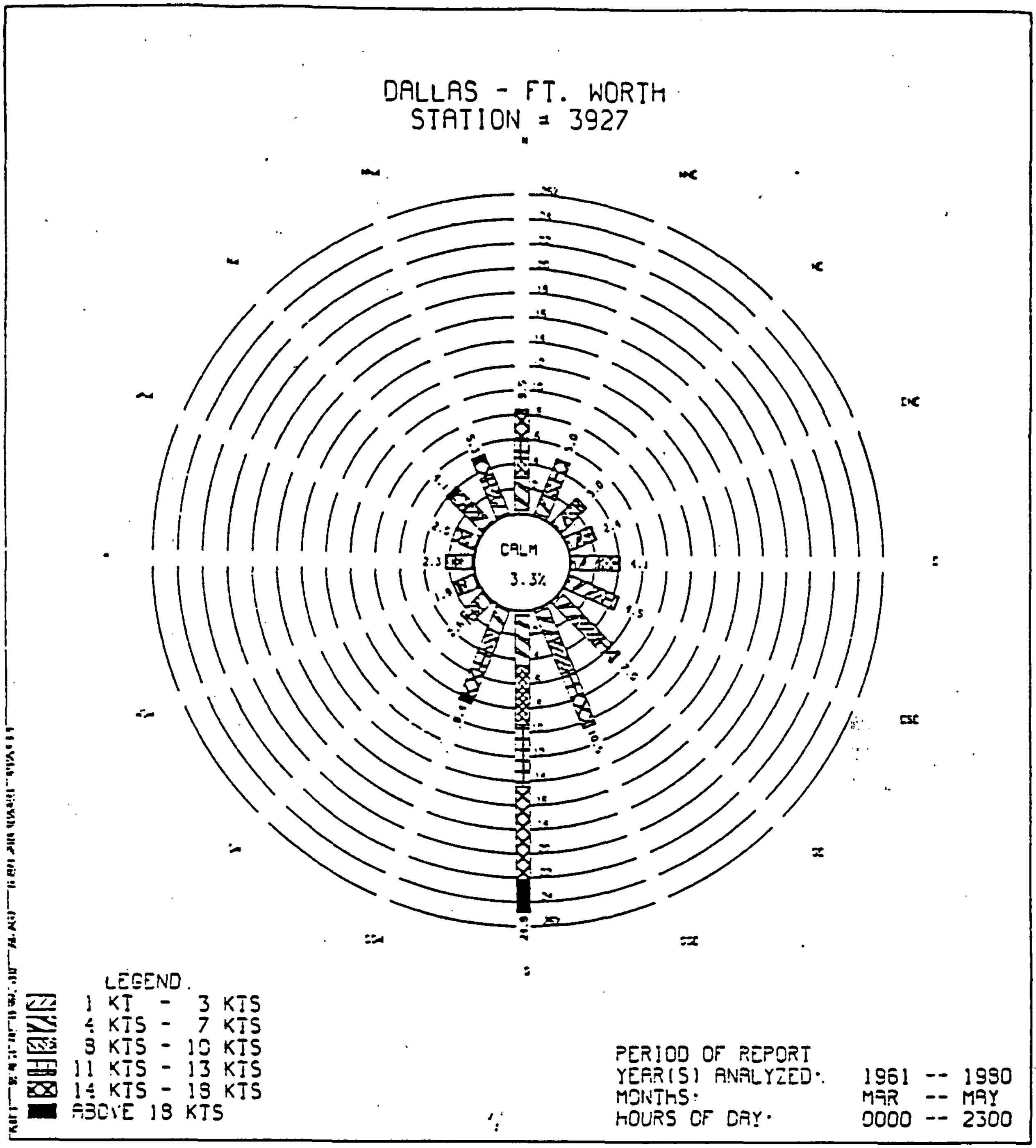
- 607 people within 0 - 0.25 miles of the site;
- 1,695 people between 0.25 - 0.50 miles of the site;
- 5,794 people between 0.50 - 1 mile of the site;
- 23,288 people within 1 - 2 miles of the site;
- 50,520 people between 2 - 3 miles of the site; and
- 65,995 people between 3 - 4 mile of the site.

The total population within a 4-mile radius of the site is 147,899 people (Reference 9).

There are no schools, day care centers, or residents within 200 feet of the site (Reference 9,14).

The nearest individual subject to exposure from a release of hazardous substances through the air is not known.

The only sensitive environment within 4 miles of the site is the Riverine Wetland environment (1 to 50 acres) on the Clear Fork Trinity River (Reference 20). There are no Endangered Species within 4 miles of the site (Reference 7).



TNRCC

Trinity Valley Iron

Fort Worth, Texas

EPA ID# 980626048

Figure 6

Wind Rose Data Fort Worth, TX.

SECTION 3
ANALYTICAL DATA ASSESSMENT CHECKLIST OF CLP DATA PACKAGES

Site Name: **Trinity Valley Iron**

No. of samples collected and matrix type: **10 Sediment**
5 Soil

Laboratories:

The sediment and soil samples were analyzed for metals and cyanide by **Southwest Laboratories** in **Oklahoma, OK**. Volatiles, semivolatiles and pesticides were analyzed by **DataChem Laboratories** in **Salt Lake City, Utah**.

The resulting CLP data packages were reviewed and validated by EPA Region 6 according to the USEPA CLP Statement of Work for Inorganic Analysis (Document Number ILMO4.0), Organic Analysis (Document Number OLMO3.1), and National Functional Guidelines for Organic Data Review (EPA 1994) and Inorganic Analyses (EPA 1994). The EPA data validation reports are included in **Appendix C**.

Quality Assurance/Quality Control Review

In accordance with the Quality Assurance Project Plan (QAPP) for the TNRCC Preliminary Assessment/Site Inspection Program (FY 97), the TNRCC has reviewed the inorganic and organic analyses to ensure accuracy, precision, representativeness, comparability, field custody and completeness. The following is the result of that review presented as an account for the acceptance or rejection of data for its use in Superfund decision-making, including the scoring of this site.

Accuracy

ICP Interference Check Samples (ICS)

ICP Interference Check Samples (ICS) were analyzed at the beginning and end of each sample analysis run and no analytes were detected at levels near the interferant levels.

Laboratory Control Samples (LCS)

Lab Control Samples (LCS) were conducted at adequate frequencies and most of the analytes had acceptable percent recoveries. Potassium and sodium had recoveries greater than the upper quality control limit, but this did not affect any of the data.

Tuning

For organics, the Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks met the ion abundance criteria.

Internal Standards

Volatile internal standards varied by more than a factor of two in SDG FFL28 for the following samples:

SAMPLE	INTERNAL STANDARD AREA		
FFL38MS	IS1	IS2	IS3
FFL38MSD		IS2	IS3
*FFL39			IS3
FFL39RE			IS3
*FFL41		IS2	IS3
FFL41RE			IS3

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d_5

*The TNRCC chooses not to use these samples because of poor quality control demonstration. Data associated with the low internal standard area responses for FFL39RE and FFL41RE are estimated and biased high.

Release samples affected: None

Semivolatile internal standards did not vary for SDG FFL28.

Surrogate Recoveries

Volatile surrogate recoveries were acceptable for all samples.

Semivolatile surrogate recoveries were acceptable for all samples. Samples FFL34, FFL37, FFL39 and FFL40 had to be diluted and therefore the surrogate recoveries were not calculated for these samples.

Pesticide surrogate recoveries of tetrachloror-m-xylene (TCX) were acceptable for all samples. Recoveries of the pesticide surrogate decachlororbiphenyl (DCB) were high on both columns for sample FFL35. DCB recovery was high on column one for samples FFL29, FFL30, FFL34, FFL37-FFL42 and FFL38MS. Positive results were qualified as estimated with high bias due to co-eluting interferences.

Release samples affected: FFL34, FFL35, FFL38 and FFL40

Matrix Spike Recoveries

The following inorganic analytes had recoveries greater than the quality control limits (75% - 125%) for SDGMFHE85: Chromium, Copper and Manganese.

The post-digestion spikes all had recoveries within the QC limits, therefore the QC problem is attributable to digestion effects. The data was not qualified since the sample results were greater than four times the spiked amount.

Release samples affected: None

Matrix spike recoveries for all the organics analyses were with the QC limits for SDG FFL28.

Blanks

The following inorganic analytes were detected in the calibration and/or preparation blanks: Antimony, Arsenic, Calcium, Iron, Lead, Potassium, Thallium and Zinc. The samples results were such that no data qualification was deemed necessary.

Release samples affected: None

For the organics analyses, no contaminants other than common laboratory contaminants, and several tentatively identified compounds were detected in the method blank results. The common laboratory contaminants when detected were qualified as estimated with raised sample quantitation limits.

Release samples affected: None

Precision

Field Duplicates:

All field duplicates were within 50% relative percent difference (RPD) of each other.

Inorganic Laboratory Duplicates

Analytes not within 10% difference of each other: Arsenic, Chromium, Copper, Iron, Manganese, Nickel and Thallium.

Release samples affected: MFHE92, MFHE94 and MFHE96. The results were qualified as estimated, because of poor quality control performance.

Organic Matrix Spike Duplicate

The relative percent differences (RPD) between the matrix spike and matrix spike duplicate recoveries were outside the advisory limits for phenol, 1,2,4-trichlorobenzene and pentachlorophenol, but no qualification was considered necessary, and no releases were affected.

ICP replicate reading

Analytes exceeding the coefficient of variation of 20 percent: Arsenic in MFHE86

Release samples affected: None

Representativeness

Field Blanks

No field blanks were collected for either SDG.

Rinsate Samples

Decontamination Event Case Number 25319 and SDG Numbers: MFGR02 and FEZ22

The equipment rinsate and blank and were analyzed for metals and cyanide by **Sentin** Laboratory in **Huntsville, AL**. Volatiles, semivolatiles and pesticides were analyzed by **CEIMIC** Laboratory in **Narragansett, RI**.

All sediment and soil samples were collected in dedicated bowls and spoons. The resulting data packages were reviewed and validated by EPA Region 6. The EPA data verification reports are included in **Appendix C**.

The following is a brief conclusion from the TNRCC review of the inorganic and organic analyses of these samples.

The sample results for these analytes detected in the equipment rinsate sample are considered contamination introduced by the decontamination procedure. Please note that the field blank, sample MFGR03, was composed of only ultra-distilled water.

The analysis of the equipment rinsate sample, MFGR02, revealed detectable amounts of the following analytes:

Analyte (ug/L)	MFGR02 (rinsate)	MFGR03 (field blank)	IDL (ug/L)	CRDL (ug/L)
Antimony	3.5		2.6	60.0
Calcium		50.0		
Chromium	3.1	0.83	0.7	10.0
Iron		16.7		
Lead	3.4	3.0	2.8	3.0
Magnesium		35.3		
Manganese	2.2	0.86	0.4	15.0
Potassium		52.4		
Zinc	51.7	12.1	1.2	20.0
Cyanide	1.6		1.4	10.0

Release samples affected: None - the contamination incurred through TNRCC decontamination procedures did not cause any concentrations of the inorganic target analytes from this site screening inspection to be disqualified as releases. The TNRCC concludes that the decontamination procedures of the bowls and spoons did not critically contribute contamination to the samples.

Holding Times

Samples were collected on April 8, 1997. The laboratories received all samples by April 9, 1997. Cooler temperatures were reported at or below 4° C.

Samples exceeding holding time criteria: None

Comparability

Methodology

Standard EPA methodology was conducted.

ICP Calibrations

ICP inorganic analyte recoveries from calibration solutions met criteria and were conducted at adequate frequencies. ICP standard calibrations for the analytes were within limits.

Organic Initial and Continuing Calibration

Most organic target analytes met the percent relative standard deviation initial calibration criteria and the percent difference continuing calibration criteria. A few target analytes were outside percent difference criteria, and some qualifications were necessary for several semivolatile compounds, but did not affect the data.

Release samples affected: None

Serial Dilution

Analytes exceeding the serial dilution % difference criteria of 10%: Antimony, Beryllium, Cobalt, Selenium and Thallium. For these analytes, the samples concentrations were not 50 times the Instrument Detection Limit (IDL), therefore, no data qualifications were necessary.

Release samples affected: None

Other ICP Criteria

The instrument detection limits, the ICP interelement correction factor, and the ICP linear range requirements were met.

EPA Contractual Assessment

EPA contractual assessment of the data packages documented a few contractual non-compliances. These non-compliances are listed by SDG number in the EPA data validation reports included in Appendix C. These non-compliances did not disqualify any release constituents.

Field Custody

Custody seals were all present and intact. Sample condition was reported as intact for each sample received.

Completeness

Number of sample results rejected: 18
Calculated % completeness: 99%

All acceptable CLP inorganic and organic data reported herein represent good quality data of reasonable confidence, and are suitable for use in Superfund decision-making, including the scoring of this site.

SECTION 4
CONCLUSIONS

The surface water pathway has been evalutated for contaminant migration from the Trinity Valley Iron facility. Analytical results are provided in Appendix C. The groundwater, soil exposure, air pathways were not evaluated for this site.

Laboratory analysis of soil samples (SO-1, SO-2, SO-3) collected from the retaining wall/fill area at the Trinity Valley Iron facility indicated elevated concentrations of organic and inorganic compounds, and pesticides. The organic compounds include; phenol, napthalene, 2-Methylnaphthalene, phenanthrene, di-n-butylphthalate, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)-anthracene, and benzo(g,h,i)perylene. The inorganic compounds detected at elevated concentrations include; antimony, cadmium, chromium, lead, manganese, nickle, selenium, silver, zinc and cyanide. The pesticides detected include; endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, gamma-Chlordane, and aroclor-1260.

The results of the analyses of sediment samples indicated releases of organic and inorganic compounds, and pesticides believed to be attributable to the site. Sediment samples SE-07, SE-08 and SE-09 were collected from the seasonal creek running from the base of the retaining wall/fill area on the TVI east property line to the Clear Fork Trinity River In-water Segment 1 (PPE). Releases of organic and inorganic compounds and pesticides were indicated. The organic compounds released include; phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i,)perylene in SE-07 and SE-08. Benzo(k)fluoranthene, and dibenzo(a,h)-anthracene were also detected above release criteria in sediment sample SE-7. The inorganic releases were indicated in sediment sample SE-08 and included; chromium, manganese, and nickel. Releases of pesticides include; endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone in SE-08, and aroclor-1260 in SE-07.

Sediment samples SE-01 and SE-02 were collected from the PPE on the Clear Fork Trinity River In-water Segment 1. The organic compounds detected in SE-01 and SE-02 include; napthalene, 2-Methylenaphthalene, and pyrene. The only inorganic compounds indicating a release is silver detected in SE-1. The pesticides indicating a release are gamma-Chlordane detected in SE-1 and SE-2, Aroclor-1260 detected in SE-1, and 4,4'-DDT detected in SE-2.

No air samples have been taken at the site. No analytical data was found which documented off-site migration of airborne hazardous substances from on-site sources. Additionally, no information was found which documented any adverse health effects reported as a result from migration of hazardous substances through the air from on-site sources.

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APPENDIX A

Photo 1 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SO-01 location in retaining wall area, facing southwest.

Photo 2 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SO-02 location in retaining wall area, facing west.

Photo 3 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SO-03 location on retaining wall area, facing south.

Photo 4 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SO-05 location in park area, facing east.

Photo 5 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SE-01 location at PPE, facing west.

Photo 6 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SE-02 location at PPE, facing east.

Photo 7 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SE-03 location downstream of PPE, north west.

Photo 8 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SE-04 location upstream of PPE, facing north west.

Photo 9 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SE-05 location upstream of PPE, facing north west.

Photo 10 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SE-06 location upstream of PPE, facing north west.

Photo 11 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SE-07 location in seasonal creek, facing west.

Photo 12 - 04/08/97 Photographer: C. Todd Counter, TNRCC
Sample SE-08 location in seasonal creek, facing north east.

Photo 13 - Date: 04/08/97 Photgrapher: C. Todd Counter, TNRCC
Sample SE-09 location in seasonal creek, facing west.

Photo 14 - 10/16/96 Photographer: C. Todd Counter, TNRCC
Documentation photo of fishery at the PPE, facing south east.

Photo 15 - Date: 10/16/96 Photgrapher: C. Todd Counter, TNRCC
General view of TVI property, facing south.

Photo 16 - 10/16/96 Photographer: C. Todd Counter, TNRCC
General view of retaining wall on east property line, facing north west.

APPENDIX B

DATE: 4/8/97

SITE: Trinity Valley Iron
Ft. Worth, TX.

TNRCC REPS: Todd Carter
Julie Mattocks
Moira McCarthy

0700 : Arrive @ site.
0745 : Began Sampling event.
1200 : Lunch
1230 : Sample
1800 : Complete Sampling.

Todd Carter

Trinity Valley Iron
Station Location: SE-01

	Sample ID#	C.O.C.#
VOA	FFL28	6-161101
VOA	FFL28	6-161102
EXT	FFL28	6-161103
EXT	FFL28	6-161104
TOT	MFHE85	6-161105
CYN	MFHE85	6-161106

Dawn : 12/10/97

Time / Date: 4/8/97 - 09:30
Sampler : J. D. Thompson
Photo : 2 - N.W. - Todd Carter
GPS : File # R040814A

Trinity Valley Iron
Station Location: SE-02

	Sample ID#	C.O.C.#
VOA	FFL29	6-161107
VOA	FFL29	6-161108
EXT	FFL29	6-161109
EXT	FFL29	6-161110
TOT	MFHE86	6-161111
CYN	MFHE86	6-161112

Time/Date 4/8/97 09:36
Sampler: Thompson
Photo: 3-DW - Todd Carter
GPS: Ditto GPS #1

Todd Carter

Trinity Valley Iron
Station Location: SE-03

	Sample ID#	C.O.C.#
VOA	FFL30	6-161113
VOA	FFL30	6-161114
EXT	FFL30	6-161115
EXT	FFL30	6-161116
TOT	MFHE87	6-161117
CYN	MFHE87	6-161118

TIME/DATE: 09:11
Sampler: J.D. Thompson
Photo #: 1 - NW / Todd Canter

GPS : PDOP No Reading 8.5 too High For Reading.

Todd Canter

Trinity Valley Iron
Station Location: SE-04

	Sample ID#	C.O.C.#
VOA	FFL31	6-161119
VOA	FFL31	6-161120
EXT	FFL31	6-161121
EXT	FFL31	6-161122
TOT	MFHE88	6-161123
CYN	MFHE88	6-161124

Date/Time: 4/8/97 09:52
Sampler: J.D. Simpson
Photo: 4. N.W. Todd Carter
GPS: R040814B

Todd Carter

Trinity Valley Iron
Station Location: SE-05

	Sample ID#	C.O.C.#
VOA	FFL32	6-161125
VOA	FFL32	6-161126
EXT	FFL32	6-161127
EXT	FFL32	6-161128
TOT	MFHE89	6-161129
CYN	MFHE89	6-161130

Date/Time : 4/8/97 10:09
Sampler : J.D. Thompson
Photo : 5 N. N. Todd Carter
GPS : R040815A

Todd Carter

Trinity Valley Iron
Station Location: SE-06

	Sample ID#	C.O.C.#
VOA	FFL33	6-161131
VOA	FFL33	6-161132
EXT	FFL33	6-161133
EXT	FFL33	6-161134
TOT	MFHE90	6-161135
CYN	MFHE90	6-161136

Date/Time: 4/8/97 Thompson 10:18
Sampler: Thompson
Photo: 6 - N.W. Todd Carter
GPS: No Reading P.D.O.P. ~ 13

Todd Carter

Trinity Valley Iron
Station Location: SE-07

	Sample ID#	C.O.C.#
VOA	FFL34	6-161137
VOA	FFL34	6-161138
EXT	FFL34	6-161139
EXT	FFL34	6-161140
TOT	MFHE91	6-161141
CYN	MFHE91	6-161142

DATE/TIME: 4/8/97 Thompson 11:51
Sampler: Thompson
Photo: 9 - W. T. Counter
GPS: ~~No Reading~~ R040816A

Photo: 19: View of Drum contents in creek NEAR SE-07 LOCATION

Todd Counts

Trinity Valley Iron
Station Location: SE-08

	Sample ID#	C.O.C.#
VOA	FFL35	6-161143
VOA	FFL35	6-161144
EXT	FFL35	6-161145
EXT	FFL35	6-161146
TOT	MFHE92	6-161147
CYN	MFHE92	6-161148

Date / Time : 4/8/97 12:15
Sampler : Thompson
Photo : 11 - N.E. - T. Canter
GPS :

[signature]

Trinity Valley Iron
Station Location: SE-09

	Sample ID#	C.O.C.#
VOA	FFL36	6-161149
VOA	FFL36	6-161150
EXT	FFL36	6-161151
EXT	FFL36	6-161152
TOT	MFHE93	6-161153
CYN	MFHE93	6-161154

DATE/TIME 4/8/97 10:55
Sampler: Thompson
Photo: 8 - N. Todd Counter
GPS 15C

Todd Counter

Trinity Valley Iron
Station Location: SE-10

	Sample ID#	C.O.C.#
VOA	FFL37	6-161155
VOA	FFL37	6-161156
EXT	FFL37	6-161157
EXT	FFL37	6-161158
TOT	MFHE94	6-161159
CYN	MFHE94	6-161160

Date/Time 4/8/97 11:58
Sampler S.D. Thompson
Photo : 10 - H. T. Conte
GPS : P.D.O.P. = 73. Approx 250 yds. East of SE-07/10

[signature]

Trinity Valley Iron
Station Location: SO-01

	Sample ID#	C.O.C.#
VOA	FFL38	6-161161
VOA	FFL38	6-161162
EXT	FFL38	6-161163
EXT	FFL38	6-161164
TOT	MFHE95	6-161165
CYN	MFHE95	6-161166

Date/Time : 4/8/97 13:38
Sampler : Thompson
Photo : 12 - W. Todd Carter
GPS : NA

Todd Carter

Trinity Valley Iron
Station Location: SO-02

	Sample ID#	C.O.C.#
VOA	FFL39	6-161167
VOA	FFL39	6-161168
EXT	FFL39	6-161169
EXT	FFL39	6-161170
TOT	MFHE96	6-161171
CYN	MFHE96	6-161172

DATE/TIME : 4/8/97 14:00
Sampler : Thompson
Photo : 13 - T. Counter - wetland
GPS : N/A

* Owner Representative Wayne Turney Split Sample w/TNRCC.
@ This Location.

Todd Counts

Trinity Valley Iron
Station Location: SO-03

	Sample ID#	C.O.C.#
VOA	FFL40	6-161173
VOA	FFL40	6-161174
EXT	FFL40	6-161175
EXT	FFL40	6-161176
TOT	MFHE97	6-161177
CYN	MFHE97	6-161178

Date/Time: 4/8/97 2:16
Sampler: Thompson
Photo: 15 - T-Center - South.
GPS: NA

Todd Conte

Trinity Valley Iron
Station Location: SO-04

	Sample ID#	C.O.C.#
VOA	FFL41	6-161179
VOA	FFL41	6-161180
EXT	FFL41	6-161181
EXT	FFL41	6-161182
TOT	MFHE98	6-161183
CYN	MFHE98	6-161184

Date / Time : 4/8/97 14:08
Sampler : Thompson
Photo : Ditto SO-2
GPS : NA

Duplicate Location of SO-02.

Todd [illegible]

Trinity Valley Iron
Station Location: SO-05

	Sample ID#	C.O.C.#
VOA	FFL42	6-161185
VOA	FFL42	6-161186
EXT	FFL42	6-161187
EXT	FFL42	6-161188
TOT	MFHE99	6-161189
CYN	MFHE99	6-161190

DATE / TIME : 4/8/97 10:41
Sampler : S.D. Thompson
Photo : 7 - S.G. Todd Carter
GPS : 15B R0408

Todd Carter

APPENDIX C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: May 23, 1997

Subject: **Contract Laboratory Program Data Review**

From: Melvin L. Ritter, ESAT RPO, 6MD-HC M. Humphrey Jr

To: B.Canellas, 6SF-RA

Site: TRINITY VALLEY

Case#: 25393

SDG#: MFH-E85

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

( ) Acceptable: No major problems with data package.

(X) Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.

( ) Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

Files (2)

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: May 21, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C.H. Chiang, ESAT Team Manager, Region VI
Tom C.H. Chiang

SUBJECT: CLP Data Review

REF: TDF # 6-7459A, ESAT File # I-2111
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25393
SDG # MFHE85
Site TRINITY VALLEY

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

The package was contractually compliant as determined by CCS and Regional review.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 360 results were reviewed for this data package. The package is technically provisional because of the following problems.

A. The reviewer qualified 18 percent of the results.

B. The chromium matrix spike recovery and laboratory duplicate difference exceeded the QC limits.

C. One arsenic ICP coefficient of variation exceeded 20 percent.

D. One field duplicate pair had inconsistent chromium and lead results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25393 SDG No. MFHE85 SDG Nos. To Follow ________ SAS No. ________ Date Rec 05/12/97

EPA Lab ID: SWOK

Lab Location: Broken Arrow. OK

Region: 6 Audit No.: 25393/MFHE85

Re_Submitted CSF? Yes ______ No X

Box No(s): 1

COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

	Signature	Printed Name/Title	Date
Audited by:	Michael J. Fertitta	Michael J. Fertitta/ ESAT Data Reviewer	05/16/97
Audited by:			
Audited by:			

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ________ Date Entered: ________ Date Reviewed: ________

Entered by: ________ ________

Reviewed by: ________ ________

Signature Printed Name/Title

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	25393	SITE	TRINITY VALLEY
LABORATORY	SWOK	NO. OF SAMPLES	15
CONTRACT#	68-D5-0136	MATRIX	soil
SDG#	MFHE85	REVIEWER (IF NOT ESD)	ESAT
SOW#	RAS ILM04.0	REVIEWER'S NAME	Mike Fertitta
ACCT# 7FAXJN58	SF# FAXUZZ	COMPLETION DATE	May 21, 1997

SAMPLE NO.'s:					
	MFH-E85	MFH-E89	MFH-E93	MFH-E97	
	MFH-E86	MFH-E90	MFH-E94	MFH-E98	
	MFH-E87	MFH-E91	MFH-E95	MFH-E99	
	MFH-E88	MFH-E92	MFH-E96		

DATA ASSESSMENT SUMMARY

	ICP	HG	CN
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	O	O	O
3. BLANKS	O	O	O
4. MATRIX SPIKES	M	O	O
5. DUPLICATE ANALYSIS	M	O	O
6. ICP QC	M		
7. FAA QC			
8. LCS	O	O	O
9. SAMPLE VERIFICATION	O	O	O
10. OTHER QC	M	O	O
11. OVERALL ASSESSMENT	M	O	O

O = Data had no problems.
M = Data qualified because of minor or major problems.
Z = Data unacceptable.
N/A = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: The chromium, copper, and manganese matrix spike recoveries exceeded the QC limit. The chromium, copper, and iron laboratory duplicate differences exceeded the QC limit. One arsenic ICP coefficient of variation exceeded 20 percent. Chromium and lead results were inconsistent for one field duplicate pair.

NOTABLE PERFORMANCE: The data package arrived 2 days early for the 35-day contractual turnaround requirement.

INORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** MFHE85 **SITE** TRINITY VALLEY **LAB** SWOK

COMMENTS: The laboratory analyzed 15 soil samples for total metals and cyanide by SOW ILM04.0. The samplers identified samples MFH-E91/MFH-E94 and MFH-E96/MFH-E98 as field duplicate pairs and sample MFH-E95 as the laboratory QC sample. The laboratory met the contractual 35-day data package turnaround requirement.

Approximately 49 percent of the reported results were above the CRDL's. The data package is technically provisional because of problems with matrix spike recoveries, an ICP coefficient of variation, and laboratory and field duplicate precision. The technical usability of the sample results is discussed below, and any qualifications are listed in the attached Data Summary Table.

The reviewer conducted an Evidence Audit for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. The samples arrived at the laboratory preserved to the proper temperature. The laboratory met contractual holding time criteria for all sample analyses. Technical holding time criteria have not yet been established for soil samples.

2. **Calibrations:** Acceptable. Instrument calibrations met contractual requirements. CRDL standard analyses indicated acceptable instrument performance near the CRDL's.

3. **Blanks:** Acceptable. All laboratory blanks met contractual criteria. The laboratory reported six analytes at concentrations below the CRDL's in the blanks. The arsenic results above the CRDL for samples MFH-E86, MFH-E87, MFH-E88, and MFH-E90 are biased high because of laboratory contamination.

INORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** MFHE85 **SITE** TRINITY VALLEY **LAB** SWOK

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. Most matrix spike recoveries were within the QC limits. The mercury recovery was marginally below the QC limit, so sample results were not qualified. The reviewer qualified all chromium, copper, and manganese results as estimated and biased high because recoveries exceeded the QC limit.

5. **Duplicate Analysis:** Provisional. The SOW required the laboratory to flag sample results for seven analytes because of outlying duplicate differences. Arsenic, manganese, nickel, and thallium results were not qualified because these duplicate differences met the technical QC limits. The reviewer qualified all chromium, copper, and iron results as estimated because the RPD's exceeded the technical QC limit.

6. **ICP Quality Control:**

   Interference Check Sample: Acceptable. Analyte recoveries for True Solution AB were within the QC limits. ICS analyses indicated acceptable application of interelement and background corrections.

   Serial Dilution: Acceptable. All serial dilution percent differences were acceptable.

   Coefficients of Variation: Provisional. Consistent replicate ICP readings indicated acceptable instrument precision for most analyses. The reviewer qualified as estimated the arsenic result for sample MFH-E86 because the coefficient of variation exceeded 20 percent.

7. **Furnace Atomic Absorption (FAA) Quality Control:** FAA was not used for this SDG.

8. **Laboratory Control Sample (LCS):** Acceptable. All LCS results were within the QC limits.

9. **Sample Verification:** The laboratory correctly reported all sample results.

INORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** MFHE85 **SITE** TRINITY VALLEY **LAB** SWOK

10. Other QC:

Field Duplicates: Provisional. The reviewer qualified the chromium and lead results for samples MFH-E91 and MFH-E94 as estimated because these field duplicate results had RPD's of 124 percent and 110 percent, respectively.

11. Overall Assessment: The data package is technically provisional with the following problems.

The reviewer qualified as estimated all chromium, copper, iron, and manganese results because of problems with matrix spike recovery and/or laboratory precision.

The reviewer qualified one arsenic result as estimated because the ICP coefficient of variation exceeded 20 percent.

The reviewer qualified as estimated the chromium and lead results for two samples because of poor field duplicate precision.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT Region 6 qualifiers assigned to results in the inorganic data review process.

U Undetected at the laboratory reported detection limit (IDL).

L Reported concentration is between the IDL and the CRDL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.

^ High bias. Actual concentration may be lower than the concentration reported.

v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25393 SDG. No.: MFHE85 Reviewer: M. FERTITTA

Laboratory: SWOK Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-E85	FLAG	MFH-E86	FLAG	MFH-E87	FLAG	MFH-E88	FLAG	MFH-E89	FLAG	COMMENTS
ALUMINUM	2880		4130		3910		3620		5530		
ANTIMONY	0.58	L	0.71	L	0.60	L	0.58	U	1.1	L	
ARSENIC	4.2		3.9	J^	4.0	J^	4.1	J^	5.7		
BARIUM	40.4	L	37.9	L	45.3	L	42.0	L	63.0	L	
BERYLLIUM	0.37	L	0.42	L	0.52	L	0.48	L	0.60	L	
CADMIUM	0.27	U	0.31	U	0.26	U	0.29	U	0.32	U	
CALCIUM	142000		114000		122000		148000		144000		
CHROMIUM	17.5	J^	7.8	J^	5.6	J^	6.3	J^	8.9	J^	
COBALT	2.3	L	2.3	L	2.4	L	2.3	L	3.2	L	
COPPER	17.0	J^	10.6	J^	5.0	LJ^	6.0	LJ^	11.0	J^	
IRON	5570	J	5260	J	5300	J	5540	J	7360	J	
LEAD	32.2		29.0		15.5		20.1		41.2		
MAGNESIUM	1680		1560		1690		1990		2300		
MANGANESE	161	J^	168	J^	196	J^	221	J^	329	J^	
MERCURY	0.13	U	0.15	U	0.13	U	0.14	U	0.16	U	
NICKEL	6.7	L	5.6	L	5.2	L	5.5	L	7.4	L	
POTASSIUM	545	L	671	L	827	L	793	L	1170	L	
SELENIUM	0.80	U	0.92	U	0.78	U	0.87	U	0.96	U	
SILVER	0.55	L	0.31	U	0.26	U	0.29	U	0.32	U	
SODIUM	417	L	367	L	341	L	423	L	423	L	
THALLIUM	0.95	L	0.69	L	0.52	U	0.58	U	0.64	U	
VANADIUM	10.1	L	10.2	L	12.4	L	11.7	L	14.6	L	
ZINC	59.2		44.3		18.0		29.1		47.8		
CYANIDE	0.27	U	0.31	U	0.26	U	0.29	U	0.32	U	
% SOLIDS	74.6		65.3		76.9		69.0		62.3		

DATA SUMMARY

Case No.: 25393 | SDG. No.: MFHE85 | Reviewer: M. FERTITTA

Laboratory: SWOK | Matrix: SOIL | Units: mg/Kg

EPA TR #=>	MFH-E90	FLAG	MFH-E91	FLAG	MFH-E92	FLAG	MFH-E93	FLAG	MFH-E94	FLAG	COMMENTS
ALUMINUM	3570		2550		2120		6290		1270		
ANTIMONY	0.64	L	1.6	L	1.8	L	0.62	L	2.7	L	
ARSENIC	3.6	J^	7.7		7.8		5.8		12.7		
BARIUM	43.7	L	35.6	L	142		65.7		70.0		
BERYLLIUM	0.49	L	0.41	L	0.48	L	0.59	L	0.41	L	
CADMIUM	0.28	U	0.23	U	0.24	U	0.29	U	0.46	L	
CALCIUM	147000		225000		199000		108000		226000		
CHROMIUM	5.7	J^	23.5	J^	29.7	J^	13.4	J^	99.6	J^	
COBALT	2.2	L	2.8	L	9.7	L	3.3	L	4.9	L	
COPPER	5.1	LJ^	175	J^	55.9	J^	12.8	J^	268	J^	
IRON	5440	J	17500	J	21600	J	7940	J	18200	J	
LEAD	14.4		12.6	J	19.4		66.7		43.1	J	
MAGNESIUM	2020		1930		1850		1930		2420		
MANGANESE	212	J^	302	J^	1370	J^	261	J^	554	J^	
MERCURY	0.14	U	0.12	U	0.12	U	0.14	U	0.12	U	
NICKEL	5.1	L	15.4		31.4		7.9	L	29.3		
POTASSIUM	758	L	249	L	313	L	1270	L	292	L	
SELENIUM	0.84	U	0.70	U	0.72	U	0.86	U	0.70	U	
SILVER	0.28	U	0.23	U	0.24	U	0.29	U	0.23	U	
SODIUM	447	L	467	L	493	L	439	L	420	L	
THALLIUM	0.56	U	1.6	L	1.4	L	0.74	L	1.0	L	
VANADIUM	11.8	L	15.0		15.0		14.9		18.2		
ZINC	23.7		59.4		48.4		106		46.1		
CYANIDE	0.28	U	0.23	U	0.24	U	0.37	L	0.23	U	
% SOLIDS	71.8		86.3		83.4		69.7		85.6		

DATA SUMMARY

Case No.: 25393 SDG. No.: MFHE85 Reviewer: M. FERTITTA

Laboratory: SWOK Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFH-E95	FLAG	MFH-E96	FLAG	MFH-E97	FLAG	MFH-E98	FLAG	MFH-E99	FLAG	COMMENTS
ALUMINUM	1740		1930		1660		2350		5900		
ANTIMONY	3.4	L	22.9		3.3	L	22.4		0.87	L	
ARSENIC	3.5		10.4		3.7		5.9		4.6		
BARIUM	20.1	L	39.9	L	26.4	L	37.6	L	63.4		
BERYLLIUM	0.22	L	0.28	L	0.21	U	0.27	L	0.66	L	
CADMIUM	0.22	U	1.7		0.35	L	3.1		0.24	U	
CALCIUM	2820		4370		24700		4790		111000		
CHROMIUM	31.1	J^	42.0	J^	13.7	J^	26.1	J^	7.9	J^	
COBALT	2.2	L	3.6	L	1.8	L	2.7	L	3.6	L	
COPPER	38.9	J^	128	J^	39.0	J^	99.3	J^	9.2	J^	
IRON	19000	J	40600	J	13500	J	27300	J	8530	J	
LEAD	92.6		767		231		866		26.4		
MAGNESIUM	474	L	931	L	521	L	1340		1950		
MANGANESE	334	J^	985	J^	223	J^	892	J^	229	J^	
MERCURY	0.14		0.11	U	0.11	U	0.12		0.12	U	
NICKEL	22.4		38.6		13.5		22.5		7.9	L	
POTASSIUM	530	L	515	L	308	L	548	L	1650		
SELENIUM	1.3		3.1		0.63	U	2.5		0.73	U	
SILVER	0.22	U	1.8	L	0.21	U	2.3		0.24	U	
SODIUM	259	L	321	L	199	L	344	L	329	L	
THALLIUM	2.3		4.7		1.4	L	3.8		0.87	L	
VANADIUM	7.7	L	8.0	L	5.6	L	6.3	L	16.5		
ZINC	84.8		742		315		929		31.4		
CYANIDE	0.25	L	0.29	L	0.21	U	1.0		0.29	L	
% SOLIDS	91.7		90.6		94.7		88.8		82.0		

#4

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25393

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	4/8/97	Airborne Express

Regional Information:

Sampler (Name): J. D. Thompson

Airbill Number: 6063336930

Non-Superfund Program:

Sampler Signature: [signature]

3. Purpose*: Lead: ☒ SF ☐ PRP ☐ ST ☐ FED; Early Action: ☐ CLEM ☐ PA ☐ REM ☐ BI ☒ SI ☐ ESI; Long-Term Action: ☐ FS ☐ RD ☐ RA ☐ O&M ☐ NPLD

5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Chuck Hoover

Site Name: Trinity Valley Iron

City, State: Ft. Worth, TX

Site Spill ID:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MFHE95	5	low	grab	6		X	X					6-161165 - 166	SO-1	4/8/97 1338	FFL38	JT	—
MFHE96	5	low	grab	6		X	X					6-161171 - 172	SO-2	4/8/97 1400	FFL39	JT	—
MFHE97	5	low	grab	6		X	X					6-161177 - 178	SO-3	4/8/97 1416	FFL40	JT	—
MFHE98	5	low	grab	6		X	X					6-161183 - 184	SO-4	4/8/97 1408	FFL41	JT	D(MFHE96)
MFHE99	5	low	grab	6		X	X					6-161189 - 190	SO-5	4/8/97 1041	FFL42	JT	—

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1	MFHE95		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Judie Mattocks	4/8/97 1730				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 A21-012-13 REV.

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

368128

#3

EPA
United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25393

1. Project Code | Account Code | 2. Region No. 6 | Sampling Co. TNRCC | 4. Date Shipped 4/8/97 | Carrier Airborne Express

Regional Information

Sampler (Name) J.D. Thompson

Airbill Number 6063337033

Non-Superfund Program

Sampler Signature

5. Ship To
SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Chuck Hoover

Site Name Trinity Valley Iron

City, State Ft. Worth, TX

Site Spill ID

3. Purpose*
Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED
Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI
Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MFHE85	5	low	grab	6		X	X					6-161105 - 106	SE-1	4/8/97 0930	FFL28	JT	—
MFHE86	5	low	grab	6		X	X					6-161111 - 112	SE-2	4/8/97 0936	FFL29	JT	—
MFHE87	5	low	grab	6		X	X					6-161117 - 118	SE-3	4/8/97 0911	FFL30	JT	—
MFHE88	5	low	grab	6		X	X					6-161123 - 124	SE-4	4/8/97 0952	FFL31	JT	—
MFHE89	5	low	grab	6		X	X					6-161129 - 130	SE-5	4/8/97 1009	FFL32	JT	—
MFHE90	5	low	grab	6		X	X					6-161135 - 136	SE-6	4/8/97 1018	FFL33	JT	—
MFHE91	5	low	grab	6		X	X					6-161141 - 142	SE-7	4/8/97 1151	FFL34	JT	—
MFHE92	5	low	grab	6		X	X					6-161147 - 148	SE-8	4/8/97 1215	FFL35	JT	—
MFHE93	5	low	grab	6		X	X					6-161153 - 154	SE-9	4/8/97 1055	FFL36	JT	—
MFHE94	5	low	grab	6		X	X					6-161159 - 160	SE-10	4/8/97 1158	FFL37	JT	D(MFHE91)

Shipment for Case Complete? (Y/N) Y | Page 1 of 1 | Sample(s) to be Used for Laboratory QC | Additional Sampler Signatures | Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jadie Mattocks	4/8/97 1730				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369987

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE85

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.01
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _74.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2880			P
7440-36-0	Antimony	0.58	B		P
7440-38-2	Arsenic	4.2		*	P
7440-39-3	Barium	40.4	B		P
7440-41-7	Beryllium	0.37	B		P
7440-43-9	Cadmium	0.27	U		P
7440-70-2	Calcium	142000			P
7440-47-3	Chromium	17.5		N*	P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	17.0		N*	P
7439-89-6	Iron	5570		*	P
7439-92-1	Lead	32.2			P
7439-95-4	Magnesium	1680			P
7439-96-5	Manganese	161		N*	P
7439-97-6	Mercury	0.13	U	N	CV
7440-02-0	Nickel	6.7	B	*	P
7440-09-7	Potassium	545	B		P
7782-49-2	Selenium	0.80	U		P
7440-22-4	Silver	0.55	B		P
7440-23-5	Sodium	417	B		P
7440-28-0	Thallium	0.95	B	*	P
7440-62-2	Vanadium	10.1	B		P
7440-66-6	Zinc	59.2			P
	Cyanide	0.27	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE86

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: _______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.02
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _65.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4130			P
7440-36-0	Antimony	0.71	B		P
7440-38-2	Arsenic	3.9		*	P
7440-39-3	Barium	37.9	B		P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	114000			P
7440-47-3	Chromium	7.8		N*	P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	10.6		N*	P
7439-89-6	Iron	5260		*	P
7439-92-1	Lead	29.0			P
7439-95-4	Magnesium	1560			P
7439-96-5	Manganese	168		N*	P
7439-97-6	Mercury	0.15	U	N	CV
7440-02-0	Nickel	5.6	B	*	P
7440-09-7	Potassium	671	B		P
7782-49-2	Selenium	0.92	U		P
7440-22-4	Silver	0.31	U		P
7440-23-5	Sodium	367	B		P
7440-28-0	Thallium	0.69	B	*	P
7440-62-2	Vanadium	10.2	B		P
7440-66-6	Zinc	44.3			P
	Cyanide	0.31	U		CA

Color Before: BROWN____ Clarity Before: _______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: _______ Artifacts: _______

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE87

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.03
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _76.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3910			P
7440-36-0	Antimony	0.60	B		P
7440-38-2	Arsenic	4.0		*	P
7440-39-3	Barium	45.3	B		P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	0.26	U		P
7440-70-2	Calcium	122000			P
7440-47-3	Chromium	5.6		N*	P
7440-48-4	Cobalt	2.4	B		P
7440-50-8	Copper	5.0	B	N*	P
7439-89-6	Iron	5300		*	P
7439-92-1	Lead	15.5			P
7439-95-4	Magnesium	1690			P
7439-96-5	Manganese	196		N*	P
7439-97-6	Mercury	0.13	U	N	CV
7440-02-0	Nickel	5.2	B	*	P
7440-09-7	Potassium	827	B		P
7782-49-2	Selenium	0.78	U		P
7440-22-4	Silver	0.26	U		P
7440-23-5	Sodium	341	B		P
7440-28-0	Thallium	0.52	U	*	P
7440-62-2	Vanadium	12.4	B		P
7440-66-6	Zinc	18.0			P
	Cyanide	0.26	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE88

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.04
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _69.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3620			P
7440-36-0	Antimony	0.58	U		P
7440-38-2	Arsenic	4.1		*	P
7440-39-3	Barium	42.0	B		P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	148000			P
7440-47-3	Chromium	6.3		N*	P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	6.0	B	N*	P
7439-89-6	Iron	5540		*	P
7439-92-1	Lead	20.1			P
7439-95-4	Magnesium	1990			P
7439-96-5	Manganese	221		N*	P
7439-97-6	Mercury	0.14	U	N	CV
7440-02-0	Nickel	5.5	B	*	P
7440-09-7	Potassium	793	B		P
7782-49-2	Selenium	0.87	U		P
7440-22-4	Silver	0.29	U		P
7440-23-5	Sodium	423	B		P
7440-28-0	Thallium	0.58	U	*	P
7440-62-2	Vanadium	11.7	B		P
7440-66-6	Zinc	29.1			P
	Cyanide	0.29	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE89

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.05
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _62.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5530			P
7440-36-0	Antimony	1.1	B		P
7440-38-2	Arsenic	5.7		*	P
7440-39-3	Barium	63.0	B		P
7440-41-7	Beryllium	0.60	B		P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	144000			P
7440-47-3	Chromium	8.9		N*	P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	11.0		N*	P
7439-89-6	Iron	7360		*	P
7439-92-1	Lead	41.2			P
7439-95-4	Magnesium	2300			P
7439-96-5	Manganese	329		N*	P
7439-97-6	Mercury	0.16	U	N	CV
7440-02-0	Nickel	7.4	B	*	P
7440-09-7	Potassium	1170	B		P
7782-49-2	Selenium	0.96	U		P
7440-22-4	Silver	0.32	U		P
7440-23-5	Sodium	423	B		P
7440-28-0	Thallium	0.64	U	*	P
7440-62-2	Vanadium	14.6	B		P
7440-66-6	Zinc	47.8			P
	Cyanide	0.32	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE90

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.06
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _71.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3570			P
7440-36-0	Antimony	0.64	B		P
7440-38-2	Arsenic	3.6		*	P
7440-39-3	Barium	43.7	B		P
7440-41-7	Beryllium	0.49	B		P
7440-43-9	Cadmium	0.28	U		P
7440-70-2	Calcium	147000			P
7440-47-3	Chromium	5.7		N*	P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	5.1	B	N*	P
7439-89-6	Iron	5440		*	P
7439-92-1	Lead	14.4			P
7439-95-4	Magnesium	2020			P
7439-96-5	Manganese	212		N*	P
7439-97-6	Mercury	0.14	U	N	CV
7440-02-0	Nickel	5.1	B	*	P
7440-09-7	Potassium	758	B		P
7782-49-2	Selenium	0.84	U		P
7440-22-4	Silver	0.28	U		P
7440-23-5	Sodium	447	B		P
7440-28-0	Thallium	0.56	U	*	P
7440-62-2	Vanadium	11.8	B		P
7440-66-6	Zinc	23.7			P
	Cyanide	0.28	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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EPA SAMPLE NO.

MFHE91

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.07
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _86.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2550			P
7440-36-0	Antimony	1.6	B		P
7440-38-2	Arsenic	7.7		*	P
7440-39-3	Barium	35.6	B		P
7440-41-7	Beryllium	0.41	B		P
7440-43-9	Cadmium	0.23	U		P
7440-70-2	Calcium	225000			P
7440-47-3	Chromium	23.5		N*	P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	175		N*	P
7439-89-6	Iron	17500		*	P
7439-92-1	Lead	12.6			P
7439-95-4	Magnesium	1930			P
7439-96-5	Manganese	302		N*	P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	15.4		*	P
7440-09-7	Potassium	249	B		P
7782-49-2	Selenium	0.70	U		P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	467	B		P
7440-28-0	Thallium	1.6	B	*	P
7440-62-2	Vanadium	15.0			P
7440-66-6	Zinc	59.4			P
	Cyanide	0.23	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: COARSE
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE92

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: _______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.08
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _83.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2120			P
7440-36-0	Antimony	1.8	B		P
7440-38-2	Arsenic	7.8		*	P
7440-39-3	Barium	142			P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	0.24	U		P
7440-70-2	Calcium	199000			P
7440-47-3	Chromium	29.7		N*	P
7440-48-4	Cobalt	9.7	B		P
7440-50-8	Copper	55.9		N*	P
7439-89-6	Iron	21600		*	P
7439-92-1	Lead	19.4			P
7439-95-4	Magnesium	1850			P
7439-96-5	Manganese	1370		N*	P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	31.4		*	P
7440-09-7	Potassium	313	B		P
7782-49-2	Selenium	0.72	U		P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	493	B		P
7440-28-0	Thallium	1.4	B	*	P
7440-62-2	Vanadium	15.0			P
7440-66-6	Zinc	48.4			P
	Cyanide	0.24	U		CA

Color Before: BROWN Clarity Before: _______ Texture: COARSE
Color After: YELLOW Clarity After: _______ Artifacts: _______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE93

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.09
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _69.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6290			P
7440-36-0	Antimony	0.62	B		P
7440-38-2	Arsenic	5.8		*	P
7440-39-3	Barium	65.7			P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	0.29	U		P
7440-70-2	Calcium	108000			P
7440-47-3	Chromium	13.4		N*	P
7440-48-4	Cobalt	3.3	B		P
7440-50-8	Copper	12.8		N*	P
7439-89-6	Iron	7940		*	P
7439-92-1	Lead	66.7			P
7439-95-4	Magnesium	1930			P
7439-96-5	Manganese	261		N*	P
7439-97-6	Mercury	0.14	U	N	CV
7440-02-0	Nickel	7.9	B	*	P
7440-09-7	Potassium	1270	B		P
7782-49-2	Selenium	0.86	U		P
7440-22-4	Silver	0.29	U		P
7440-23-5	Sodium	439	B		P
7440-28-0	Thallium	0.74	B	*	P
7440-62-2	Vanadium	14.9			P
7440-66-6	Zinc	106			P
	Cyanide	0.37	B		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE94

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.10
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _85.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1270			P
7440-36-0	Antimony	2.7	B		P
7440-38-2	Arsenic	12.7		*	P
7440-39-3	Barium	70.0			P
7440-41-7	Beryllium	0.41	B		P
7440-43-9	Cadmium	0.46	B		P
7440-70-2	Calcium	226000			P
7440-47-3	Chromium	99.6		N*	P
7440-48-4	Cobalt	4.9	B		P
7440-50-8	Copper	268		N*	P
7439-89-6	Iron	18200		*	P
7439-92-1	Lead	43.1			P
7439-95-4	Magnesium	2420			P
7439-96-5	Manganese	554		N*	P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	29.3		*	P
7440-09-7	Potassium	292	B		P
7782-49-2	Selenium	0.70	U		P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	420	B		P
7440-28-0	Thallium	1.0	B	*	P
7440-62-2	Vanadium	18.2			P
7440-66-6	Zinc	46.1			P
	Cyanide	0.23	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: COARSE
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE95

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.11
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _91.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1740			P
7440-36-0	Antimony	3.4	B		P
7440-38-2	Arsenic	3.5		*	P
7440-39-3	Barium	20.1	B		P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.22	U		P
7440-70-2	Calcium	2820			P
7440-47-3	Chromium	31.1		N*	P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	38.9		N*	P
7439-89-6	Iron	19000		*	P
7439-92-1	Lead	92.6			P
7439-95-4	Magnesium	474	B		P
7439-96-5	Manganese	334		N*	P
7439-97-6	Mercury	0.14		N	CV
7440-02-0	Nickel	22.4		*	P
7440-09-7	Potassium	530	B		P
7782-49-2	Selenium	1.3			P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	259	B		P
7440-28-0	Thallium	2.3		*	P
7440-62-2	Vanadium	7.7	B		P
7440-66-6	Zinc	84.8			P
	Cyanide	0.25	B		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE96

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: _______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.12
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _90.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1930			P
7440-36-0	Antimony	22.9			P
7440-38-2	Arsenic	10.4		*	P
7440-39-3	Barium	39.9	B		P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	1.7			P
7440-70-2	Calcium	4370			P
7440-47-3	Chromium	42.0		N*	P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	128		N*	P
7439-89-6	Iron	40600		*	P
7439-92-1	Lead	767			P
7439-95-4	Magnesium	931	B		P
7439-96-5	Manganese	985		N*	P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	38.6		*	P
7440-09-7	Potassium	515	B		P
7782-49-2	Selenium	3.1			P
7440-22-4	Silver	1.8	B		P
7440-23-5	Sodium	321	B		P
7440-28-0	Thallium	4.7		*	P
7440-62-2	Vanadium	8.0	B		P
7440-66-6	Zinc	742			P
	Cyanide	0.29	B		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE97

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.13
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _94.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1660			P
7440-36-0	Antimony	3.3	B		P
7440-38-2	Arsenic	3.7		*	P
7440-39-3	Barium	26.4	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.35	B		P
7440-70-2	Calcium	24700			P
7440-47-3	Chromium	13.7		N*	P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	39.0		N*	P
7439-89-6	Iron	13500		*	P
7439-92-1	Lead	231			P
7439-95-4	Magnesium	521	B		P
7439-96-5	Manganese	223		N*	P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	13.5		*	P
7440-09-7	Potassium	308	B		P
7782-49-2	Selenium	0.63	U		P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	199	B		P
7440-28-0	Thallium	1.4	B	*	P
7440-62-2	Vanadium	5.6	B		P
7440-66-6	Zinc	315			P
	Cyanide	0.21	U		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE98

Lab Name: SOUTHWEST_LABS_OF_OK______ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: ______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.14
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _88.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2350			P
7440-36-0	Antimony	22.4			P
7440-38-2	Arsenic	5.9		*	P
7440-39-3	Barium	37.6	B		P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	3.1			P
7440-70-2	Calcium	4790			P
7440-47-3	Chromium	26.1		N*	P
7440-48-4	Cobalt	2.7	B		P
7440-50-8	Copper	99.3		N*	P
7439-89-6	Iron	27300		*	P
7439-92-1	Lead	866			P
7439-95-4	Magnesium	1340			P
7439-96-5	Manganese	892		N*	P
7439-97-6	Mercury	0.12		N	CV
7440-02-0	Nickel	22.5		*	P
7440-09-7	Potassium	548	B		P
7782-49-2	Selenium	2.5			P
7440-22-4	Silver	2.3			P
7440-23-5	Sodium	344	B		P
7440-28-0	Thallium	3.8		*	P
7440-62-2	Vanadium	6.3	B		P
7440-66-6	Zinc	929			P
	Cyanide	1.0			CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFHE99

Lab Name: SOUTHWEST_LABS_OF_OK_____ Contract: 68-D5-0136
Lab Code: SWOK__ Case No.: 25393 SAS No.: _______ SDG No.: MFHE85
Matrix (soil/water): SOIL_ Lab Sample ID: 29054.15
Level (low/med): LOW__ Date Received: 04/09/97
% Solids: _82.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5900			P
7440-36-0	Antimony	0.87	B		P
7440-38-2	Arsenic	4.6		*	P
7440-39-3	Barium	63.4			P
7440-41-7	Beryllium	0.66	B		P
7440-43-9	Cadmium	0.24	U		P
7440-70-2	Calcium	111000			P
7440-47-3	Chromium	7.9		N*	P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	9.2		N*	P
7439-89-6	Iron	8530		*	P
7439-92-1	Lead	26.4			P
7439-95-4	Magnesium	1950			P
7439-96-5	Manganese	229		N*	P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	7.9	B	*	P
7440-09-7	Potassium	1650			P
7782-49-2	Selenium	0.73	U		P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	329	B		P
7440-28-0	Thallium	0.87	B	*	P
7440-62-2	Vanadium	16.5			P
7440-66-6	Zinc	31.4			P
	Cyanide	0.29	B		CA

Color Before: BROWN____ Clarity Before: ______ Texture: MEDIUM
Color After: YELLOW___ Clarity After: ______ Artifacts: ______

Comments:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 6-10-1997

Subject: **Contract Laboratory Program Data Review**

From: Melvin L. Ritter, ESAT RPO, 6MD-HC M L Ritter

To: B. Canellas , 6SF-RA

Site: TRINITY VALLEY

Case#: 25393

SDG# : FF-L28

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site.

The samples analyzed and reviewed are detailed in the attached Regional data assessment report for this case.

The data package was found to be:

( ) Acceptable: No problems with data package.

(X) Provisional: use of data requires caution. Problems are noted in Review Summary. Data is acceptable for Regional use.

( ) Unacceptable: Some or all of data should not be used. Problems are noted in the Review Summary.

Questions regarding the data review can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. ElFeky, Region 6 Data Coordinator

Files (2)

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TX 77074

MEMORANDUM

DATE: June 2, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C. H. Chiang, ESAT TM, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-7472A ESAT File # O-1821

Attached is the data review summary for Case # 25393
SDG # FFL28
Site Trinity Valley

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE

A. The data package was contractually compliant as determined by the hardcopy review and CCS.

B. The data package arrived 1 day late for the 35-day contractual turnaround time.

II. TECHNICAL ASSESSMENT OF DATA PACKAGE

The total number of results reviewed for this data package is 1875. The data package is technically provisional because of the following significant problems.

1. Two VOA samples and the reanalyses had low IS areas.

2. Coeluting aroclor peaks obscured the detection of several pesticides above CRQL's in two samples.

3. Aroclor 1260 may be present but was not reported in two Pest/PCB samples.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	25393	SITE	Trinity Valley
LABORATORY	DATAC	NO. OF SAMPLES	15
CONTRACT#	68-D5-0017	MATRIX	Soil
SDG#	FFL28	REVIEWER (IF NOT ESD)	ESAT
SOW#	CLP SOW OLM03.2	REVIEWER'S NAME	M.Missler/ T.Fan
ACCT#	7FAXJN58 SF# FAXUZZ	COMPLETION DATE	June 2, 1997

SAMPLE NO.					
	FF-L28	FF-L32	FF-L36	FF-L40	
	FF-L29	FF-L33	FF-L37	FF-L41	
	FF-L30	FF-L34	FF-L38	FF-L42	
	FF-L31	FF-L35	FF-L39		

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	O	M	O
4. BLANKS	O	O	O
5. SMCS/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	M	O
7. OTHER QC	O	M	M
8. INTERNAL STANDARDS	M	O	N/A
9. COMPOUND ID/QUANTITATION	O	M	M
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	M	M	M

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
N/A = Not applicable.

ACTION ITEMS: The data package was 1 day late for the 35-day turnaround time.
AREA OF CONCERN: **VOA** Two samples had low internal standard (IS) responses. **BNA** Three analytes failed technical calibration criteria. Phenol had an outlying %RPD MS/MSD result. Some field/spiked duplicate results were inconsistent. **Pest/PCB** The field duplicates had a few inconsistent results. Aroclor interferences affected the detection of several pesticides in two samples. Eight samples had problems with compound identification/quantitation including false negative AR1260 results for two samples.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	13	2	
BNA	10	5	
PEST	6	9	

COMMENTS: The case consisted of 15 soil samples for complete RAS organics analysis following OLM03.2. According to the OTR/COC records, samples FF-L34/FF-L37 and FF-L39/FF-L41 were field duplicate pairs and sample FF-L38 was designated for MS/MSD analyses. The data package arrived 1 day late for the contractual 35-day turnaround time. The laboratory analyzed the samples following the low level methods.

VOA Acetone was reported above CRQL's in four samples. Other samples did not contain TCL analytes above CRQL's. Samples FF-L39 and FF-L41 and their reanalyses had low IS responses. The reviewer recommends using data for FF-L39 and FF-L41RE to minimize data qualification.

BNA Nine samples contained target analytes above CRQL's including phenol, carbazole, PAH's, and phthalate esters. The laboratory diluted and reanalyzed samples FF-L34, FF-L37, and FF-L40 because of high PAH concentrations. Sample FF-L39 was also diluted for a high bis(2-ethylhexyl)phthalate concentration that was not confirmed by the field duplicate.

Pest/PCB Aroclor 1260, chlordanes, and several other pesticides were reported in a few samples above the CRQL's. Coeluting aroclor peaks obscured the detection of several pesticides, and false negatives may exist for two AR1260 results.

Some results are provisional for two VOA, five BNA, and nine Pest/PCB samples because of problems with calibration, IS and MS/MSD performance, inconsistent field/spiked duplicate results, aroclor interference, and compound identification and quantitation. The technical usability of all reported sample results is appropriately indicated by ESAT's final data qualifiers in the attached Data Summary Table.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. All samples met contractual holding time criteria. No technical holding time criteria exist for the soil samples.

2. **Tuning/Performance:** Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Pest/PCB analysis met instrument performance guidelines.

3. **Calibrations:** Provisional. The target analytes met contractual calibration criteria. The reported concentrations are estimated for the following BNA analytes because the analytes failed technical %D calibration criteria:

pyrene in samples FF-L29 and FF-L35,

benzo(b)fluoranthene in samples FF-L34 and FF-L35, and

bis(2-ethylhexyl)phthalate in sample FF-L39DL.

4. **Blanks:** Acceptable. The method, instrument, and storage blanks met contractual QC guidelines.

VOA Methylene chloride, xylenes, and/or styrene were reported below CRQL's in the method and storage blanks. All sample results "B"-flagged by the laboratory should be considered undetected (U) because of possible laboratory contamination.

BNA The method blank contained di-n-butylphthalate below the CRQL. The di-n-butylphthalate results for the following samples should be considered undetected (U) because the concentrations were below 10X the blank value:

FF-L28, FF-L32, FF-L36, FF-L39, and FF-L41.

The di-n-butylphthalate concentrations below the CRQL's are biased high for the following samples because of possible laboratory contamination:

FF-L29, FF-L30, FF-L31, FF-L34, FF-L35, FF-L37, and FF-L42.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

4. **Blanks** (continued)

Pest/PCB The method blank had non-TCL contaminants that interfered with the detection of endosulfan sulfate and methoxychlor on one column. No data were qualified per Region 6 guidelines.

5. **System Monitoring Compounds/Surrogates:** Acceptable. The SMC and surrogate recoveries met QC criteria with a few exceptions. Several Pest/PCB samples had high DCB recoveries on one or both columns because of coeluting matrix interferences. In the reviewer's opinion, data qualification is unnecessary.

6. **Matrix Spike/Matrix Spike Duplicate:** Provisional. The MS/MSD results were within the QC limits with the following exceptions.

BNA The %RPD's exceeded the QC limits for phenol, 1,2,4-trichlorobenzene, and pentachlorophenol. The reviewer qualified the phenol concentration for the unspiked sample FF-L38 as estimated because of the poor analysis precision. The other two analytes with outlying %RPD's were not detected in the unspiked sample, so no data were qualified.

7. **Other QC:**

<u>**Field Duplicates**</u>: Provisional. Field duplicate results were consistent with the following exceptions.

BNA Bis(2-ethylhexyl)phthalate had inconsistent concentrations (a 30X difference) for duplicate samples FF-L39 and FF-L41. The reviewer qualified the concentration for bis(2-ethylhexyl)phthalate in sample FF-L39DL as estimated and high biased. The corresponding result for sample FF-L41 was not qualified because the concentration was below the CRQL.

Pest/PCB The reviewer qualified concentrations for the following analytes as estimated because of inconsistent quantitation results for field duplicates:

AR1260 in samples FF-L34 and FF-L37,

endosulfan sulfate in samples FF-L39 and FF-L41.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

7. Other QC (continued)

Field duplicate samples FF-L34 and FF-L37 had several other inconsistent pesticide results. In the reviewer's opinion, these pesticides were identified based on coeluting AR1260 peaks and the inconsistency in concentrations was due to inconsistent aroclor concentrations. The effect of aroclor interferences is addressed in section 9 of this report.

8. Internal Standards (IS): Provisional. The VOA and BNA samples had acceptable IS performance with the following exceptions.

VOA The laboratory reanalyzed samples FF-L39 and FF-L41 because of low IS areas, and the reanalyses had similar problems. Data for samples FF-L39 and FF-L41RE are recommended for use because of improved IS responses. The reviewer qualified the analyte results associated with IS3 as estimated and biased low for these two samples because of low IS areas. Samples FF-L38 MS/MSD had several low IS areas, but the matrix spike recoveries did not seem to be affected.

9. Compound Identity/Quantitation: Provisional.

VOA/BNA The only VOA TCL analyte reported above CRQL's is acetone in samples FF-L29, FF-L31, FF-L32, FF-L33, and FF-L40. Some of the following BNA compounds were reported above CRQL's in nine samples: phenol, carbazole, PAH's, and phthalate esters. BNA sample FF-L40 and the field duplicate pair FF-L34/FF-L37 had high PAH concentrations. BNA sample FF-L39 had a high concentration of bis(2-ethylhexyl)phthalate. Sample spectra were consistent with reference spectra for all reported analytes.

Concentrations for the unspiked analytes were inconsistent (2X to 4X different) among BNA samples FF-L38, FF-L38MS, and FF-L38MSD probably because of an inhomogeneous sample matrix. The reviewer qualified the concentrations above the CRQL's as estimated for naphthalene and 2-methylnaphthalene in BNA sample FF-L38 because they may not be representative of the true concentrations.

Pest/PCB Aroclor 1260, chlordanes, and several pesticides were reported in a few of the samples above CRQL's. GC/MS confirmation was not feasible for the reported results.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

9. **Compound Identity/Quantitation** (continued)

The methoxychlor concentration in sample FF-L38 was up to 3X higher than the concentrations in spiked replicates FF-L38MS/MSD. The reviewer qualified the methoxychlor concentration as estimated for sample FF-L38 because of poor representativeness.

Based on inspection of the raw data AR1260 may be present in samples FF-L35 and FF-L37 at concentrations above the CRQL's, but was not reported by the laboratory. The reviewer qualified the AR1260 quantitation limits for these two samples as estimated pending laboratory verification.

AR1260 peaks coeluted with several pesticides. Although meeting retention time criteria for compound identification, the peaks for several reported pesticides were actually aroclor peaks in the reviewer's opinion. As a consequence of the aroclor interferences on both columns, the reviewer made the following qualifications.

The dieldrin and endrin results (>CRQL's) for sample FF-L34 should be used as raised quantitation limits.

The dieldrin and endrin results below the CRQL's were qualified as undetected (U) for samples FF-L28 and FF-L40.

In the reviewer's opinion, the identification is questionable and the reported concentration (>CRQL) estimated for the following analytes because of coeluting aroclor interference on one column:

DDE, DDD, and DDT in sample FF-L34, and

methoxychlor and endrin ketone in samples FF-L34 and FF-L40.

The reported quantitation limits were unrealistic for endrin aldehyde in samples FF-L34 and FF-L40 because they were not corrected for the aroclor interferences. The reviewer qualified these quantitation limits as estimated and biased low.

Concentrations for the "P"-flagged results are estimated in samples FF-L29, FF-L34, FF-L35, FF-L36, FF-L37, FF-L38, FF-L40, and FF-L41 because the two column quantitation results differed by more than 25 percent.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25393 **SDG** FFL28 **SITE** Trinity Valley **LAB** DATAC

10. Performance/Completeness: Acceptable. The data package was complete with minor deficiencies. The laboratory was contacted for correction and resubmission (see attached FAX Record log).

11. Overall Assessment: Data are acceptable for 13 VOA, 10 BNA, and 6 Pest/PCB samples.

VOA Some results are provisional for samples FF-L39 and FF-L41RE because of problems with low IS areas.

BNA Some results are provisional for samples FF-L29, FF-L34, FF-L35, FF-L38, and FF-L39DL because of problems with calibration, MS/MSD performance, and inconsistent field/spiked duplicate results.

Pest/PCB Some results are provisional for samples FF-L29, FF-L34, FF-L35, FF-L36, FF-L37, FF-L38, FF-L39, FF-L40, and FF-L41 because of problems with inconsistent field/spiked duplicate results, aroclor interference, and compound identification and quantitation.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25393 | SDG: FFL28 | Reviewer: T. Fan/M. Missler

Laboratory: DATAC | Matrix: SOIL | Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-L28	FF-L29	FF-L30	FF-L31	FF-L32	FF-L33	FF-L34
Chloromethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Bromomethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Vinyl chloride	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Chloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Methylene chloride	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Acetone	13 U	120	12 J	63	18	24	12 U
Carbon disulfide	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,1-Dichloroethene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,1-Dichloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,2-Dichloroethene (total)	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Chloroform	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,2-Dichloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
2-Butanone	13 U	5 J	13 U	3 J	15 U	14 U	12 U
1,1,1-Trichloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Carbon tetrachloride	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Bromodichloromethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,2-Dichloropropane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
cis-1,3-Dichloropropene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Trichloroethene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Dibromochloromethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
1,1,2-Trichloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Benzene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
trans-1,3-Dichloropropene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Bromoform	13 U	15 U	13 U	15 U	15 U	14 U	12 U
4-Methyl-2-pentanone	13 U	15 U	13 U	15 U	15 U	14 U	12 U
2-Hexanone	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Tetrachloroethene	13 U	15 U	13 U	15 U	15 U	14 U	1 J
1,1,2,2-Tetrachloroethane	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Toluene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Chlorobenzene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Ethylbenzene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Styrene	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Xylenes (total)	13 U	15 U	13 U	15 U	15 U	14 U	12 U
Sample wt (g):	5	5	5	5	5	5	5
%Moisture:	25	34	24	33	34	28	20
Dilution Factor:	1	1	1	1	1	1	1
Level:	Low	Low	Low	Low	Low	Low	Low
Number of TIC's:	0	0	0	0	0	0	0

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-L35	FF-L36	FF-L37	FF-L38	FF-L39	FF-L39RE	FF-L40
Chloromethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Bromomethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Vinyl chloride	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Chloroethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Methylene chloride	12 U	13 U	11 U	11 U	11 U	2 *	11 U
Acetone	12 U	5 J	11 U	3 J	11 U	11 U *	53
Carbon disulfide	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,1-Dichloroethene	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,1-Dichloroethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,2-Dichloroethene (total)	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Chloroform	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,2-Dichloroethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
2-Butanone	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,1,1-Trichloroethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Carbon tetrachloride	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Bromodichloromethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,2-Dichloropropane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
cis-1,3-Dichloropropene	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Trichloroethene	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Dibromochloromethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
1,1,2-Trichloroethane	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Benzene	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
trans-1,3-Dichloropropene	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
Bromoform	12 U	13 U	11 U	11 U	11 U	11 U *	11 U
4-Methyl-2-pentanone	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
2-Hexanone	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Tetrachloroethene	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
1,1,2,2-Tetrachloroethane	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Toluene	12 U	13 U	11 U	11 U	11 UJv	11 U *	4 J
Chlorobenzene	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Ethylbenzene	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Styrene	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Xylenes (total)	12 U	13 U	11 U	11 U	11 UJv	11 U *	11 U
Sample wt (g):	5	5	5	5	5	5	5
%Moisture:	20	24	12	10	11	11	5
Dilution Factor:	1	1	1	1	1	1	1
Level:	Low	Low	Low	Low	Low	Low	Low
Number of TIC's:	0	0	0	0	0	0	0

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-L41	FF-L41RE	FF-L42				
Chloromethane	11 U *	11 U	12 U				
Bromomethane	11 U *	11 U	12 U				
Vinyl chloride	11 U *	11 U	12 U				
Chloroethane	11 U *	11 U	12 U				
Methylene chloride	11 U *	11 U	12 U				
Acetone	11 U *	3 J	12 U				
Carbon disulfide	11 U *	11 U	12 U				
1,1-Dichloroethene	11 U *	11 U	12 U				
1,1-Dichloroethane	11 U *	11 U	12 U				
1,2-Dichloroethene (total)	11 U *	11 U	12 U				
Chloroform	11 U *	11 U	12 U				
1,2-Dichloroethane	11 U *	11 U	12 U				
2-Butanone	11 U *	11 U	12 U				
1,1,1-Trichloroethane	11 U *	11 U	12 U				
Carbon tetrachloride	11 U *	11 U	12 U				
Bromodichloromethane	11 U *	11 U	12 U				
1,2-Dichloropropane	11 U *	11 U	12 U				
cis-1,3-Dichloropropene	11 U *	11 U	12 U				
Trichloroethene	11 U *	11 U	12 U				
Dibromochloromethane	11 U *	11 U	12 U				
1,1,2-Trichloroethane	11 U *	11 U	12 U				
Benzene	11 U *	11 U	12 U				
trans-1,3-Dichloropropene	11 U *	11 U	12 U				
Bromoform	11 U *	11 U	12 U				
4-Methyl-2-pentanone	11 U *	11 UJv	12 U				
2-Hexanone	11 U *	11 UJv	12 U				
Tetrachloroethene	11 U *	11 UJv	12 U				
1,1,2,2-Tetrachloroethane	11 U *	11 UJv	12 U				
Toluene	11 U *	11 UJv	12 U				
Chlorobenzene	11 U *	11 UJv	12 U				
Ethylbenzene	11 U *	11 UJv	12 U				
Styrene	11 U *	11 UJv	12 U				
Xylenes (total)	11 U *	11 UJv	12 U				
Sample wt (g):	5	5	5				
%Moisture:	9	9	18				
Dilution Factor:	1	1	1				
Level:	Low	Low	Low				
Number of TIC's:	0	0	0				

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-L28	FF-L29	FF-L30	FF-L31	FF-L32	FF-L33	FF-L34
Phenol	24 J	160 J	430 U	430 U	480 U	420 U	58 J
bis(2-Chloroethyl)ether	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2-Chlorophenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
1,3-Dichlorobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
1,4-Dichlorobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
1,2-Dichlorobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2-Methylphenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,2'-Oxybis(1-chloropropane)	410 U	470 U	430 U	430 U	480 U	420 U	410 U
4-Methylphenol	410 U	130 J	430 U	57 J	480 U	420 U	410 U
N-Nitroso-di-n-propylamine	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Hexachloroethane	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Nitrobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Isophorone	410 U	470 U	430 U	430 U	480 U	420 U	13 J
2-Nitrophenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,4-Dimethylphenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
bis(2-Chloroethoxy)methane	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,4-Dichlorophenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
1,2,4-Trichlorobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Naphthalene	410 U	560	430 U	430 U	480 U	420 U	35 J
4-Chloroaniline	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Hexachlorobutadiene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
4-Chloro-3-methylphenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2-Methylnaphthalene	410 U	1000	430 U	430 U	480 U	420 U	39 J
Hexachlorocyclopentadiene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,4,6-Trichlorophenol	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,4,5-Trichlorophenol	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
2-Chloronaphthalene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2-Nitroaniline	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
Dimethylphthalate	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Acenaphthylene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
2,6-Dinitrotoluene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
3-Nitroaniline	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
Acenaphthene	410 U	21 J	430 U	430 U	480 U	420 U	240 J
2,4-Dinitrophenol	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
4-Nitrophenol	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
Dibenzofuran	410 U	470 U	430 U	430 U	480 U	420 U	160 J
2,4-Dinitrotoluene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Diethylphthalate	410 U	470 U	430 U	430 U	480 U	420 U	15 J
4-Chlorophenyl-phenylether	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Fluorene	410 U	25 J	430 U	430 U	480 U	420 U	380 J
4-Nitroaniline	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
4,6-Dinitro-2-methylphenol	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
N-Nitrosodiphenylamine	410 U	470 U	430 U	430 U	480 U	420 U	410 U
4-Bromophenyl-phenylether	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Hexachlorobenzene	410 U	470 U	430 U	430 U	480 U	420 U	410 U
Pentachlorophenol	1000 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U
Phenanthrene	28 J	320 J	22 J	19 J	23 J	31 J	3600 *
Anthracene	410 U	35 J	430 U	430 U	480 U	420 U	640

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-L28		FF-L29		FF-L30		FF-L31		FF-L32		FF-L33		FF-L34	
Carbazole	410	U	470	U	430	U	430	U	480	U	420	U	510	
Di-n-butylphthalate	410	U	190	BJ	180	BJ	180	BJ	480	U	300	J	200	BJ
Fluoranthene	59	J	470	J	47	J	37	J	60	J	68	J	4300	*
Pyrene	70	J	540	J	40	J	38	J	58	J	70	J	4400	*
Butylbenzylphthalate	410	U	470	U	57	J	430	U	480	U	420	U	56	J
3,3'-Dichlorobenzidine	410	U	470	U	430	U	430	U	480	U	420	U	410	U
Benzo(a)anthracene	26	J	190	J	24	J	15	J	27	J	28	J	2600	
Chrysene	36	J	270	J	41	J	21	J	38	J	47	J	3000	
bis(2-Ethylhexyl)phthalate	33	J	190	J	30	J	37	J	37	J	180	J	220	J
Di-n-octylphthalate	410	U	470	U	430	U	430	U	430	U	420	U	410	U
Benzo(b)fluoranthene	45	J	290	J	34	J	430	U	50	J	53	J	2900	J
Benzo(k)fluoranthene	15	J	110	J	17	J	430	U	17	J	21	J	840	
Benzo(a)pyrene	410	U	180	J	430	U	430	U	480	U	420	U	2000	
Indeno(1,2,3-cd)pyrene	410	U	170	J	430	U	430	U	480	U	420	U	2400	
Dibenz(a,h)anthracene	410	U	470	U	430	U	430	U	480	U	420	U	590	
Benzo(g,h,i)perylene	410	U	170	J	430	U	430	U	480	U	420	U	2200	
Sample wt (g):	30.0		30.0		30.0		30.0		30.0		30.0		30.0	
%Moisture:	20		30		24		24		31		22		20	
Dilution Factor:	1.0		1.0		1.0		1.0		1.0		1.0		1.0	
Level:	Low		Low		Low		Low		Low		Low		Low	
Number of TIC's:	10		24		9		10		10		10		29	

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-L34DL		FF-L35		FF-L36		FF-L37		FF-L37DL		FF-L38		FF-L39	
Phenol	58	*	73	J	420	U	32	J	39	*	870	J	940	
bis(2-Chloroethyl)ether	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2-Chlorophenol	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
1,3-Dichlorobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
1,4-Dichlorobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
1,2-Dichlorobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2-Methylphenol	820	U *	410	U	420	U	370	U	750	U *	54	J	170	J
2,2'-Oxybis(1-chloropropane)	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
4-Methylphenol	820	U *	410	U	420	U	370	U	750	U *	28	J	77	J
N-Nitroso-di-n-propylamine	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Hexachloroethane	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Nitrobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Isophorone	820	U *	410	U	420	U	370	U	750	U *	12	J	32	J
2-Nitrophenol	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2,4-Dimethylphenol	820	U *	410	U	420	U	370	U	750	U *	370	U	130	J
bis(2-Chloroethoxy)methane	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2,4-Dichlorophenol	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
1,2,4-Trichlorobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Naphthalene	820	U *	65	J	420	U	45	J	39	*	460	J	670	
4-Chloroaniline	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Hexachlorobutadiene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
4-Chloro-3-methylphenol	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2-Methylnaphthalene	26	*	56	J	420	U	54	J	44	*	400	J	490	
Hexachlorocyclopentadiene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2,4,6-Trichlorophenol	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2,4,5-Trichlorophenol	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
2-Chloronaphthalene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
2-Nitroaniline	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
Dimethylphthalate	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Acenaphthylene	820	U *	410	U	420	U	13	J	750	U *	370	U	14	J
2,6-Dinitrotoluene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
3-Nitroaniline	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
Acenaphthene	180	*	48	J	420	U	240	J	220	*	21	J	38	J
2,4-Dinitrophenol	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
4-Nitrophenol	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
Dibenzofuran	120	*	36	J	420	U	190	J	180	*	65	J	150	J
2,4-Dinitrotoluene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Diethylphthalate	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
4-Chlorophenyl-phenylether	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Fluorene	300	*	68	J	420	U	360	J	340	*	27	J	93	J
4-Nitroaniline	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
4,6-Dinitro-2-methylphenol	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
N-Nitrosodiphenylamine	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
4-Bromophenyl-phenylether	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Hexachlorobenzene	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Pentachlorophenol	2100	U *	1000	U	1100	U	940	U	1900	U *	920	U	930	U
Phenanthrene	2900		730		150	J	2900		2900	*	340	J	640	
Anthracene	510	*	110	J	20	J	500		490	*	68	J	120	J

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-L34DL		FF-L35		FF-L36		FF-L37		FF-L37DL		FF-L38		FF-L39	
Carbazole	410	*	93	J	24	J	630		610	*	26	J	370	U
Di-n-butylphthalate	160	*	200	BJ	420	U	220	BJ	210	*	310	J	370	U
Fluoranthene	3800		1000		230	J	3800	*	3600		220	J	160	J
Pyrene	3600		980	J	270	J	3000		3300	*	200	J	200	J
Butylbenzylphthalate	42	*	410	U	420	U	370	U	750	U *	24	J	370	U
3,3'-Dichlorobenzidine	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Benzo(a)anthracene	2000	*	560		140	J	2000		1600	*	190	J	140	J
Chrysene	2100	*	690		170	J	1800		1900	*	240	J	270	J
bis(2-Ethylhexyl)phthalate	180	*	200	J	110	J	200	J	200	*	110	J	4500	*
Di-n-octylphthalate	820	U *	410	U	420	U	370	U	750	U *	370	U	370	U
Benzo(b)fluoranthene	2500	*	670	J	190	J	2300		2000	*	200	J	130	J
Benzo(k)fluoranthene	760	*	270	J	77	J	630		730	*	59	J	33	J
Benzo(a)pyrene	1600	*	480		130	J	1300		1300	*	140	J	94	J
Indeno(1,2,3-cd)pyrene	1400	*	680		180	J	1400		1200	*	120	J	110	J
Dibenz(a,h)anthracene	370	*	170	J	420	U	340	J	320	*	45	J	53	J
Benzo(g,h,i)perylene	1300	*	650		180	J	1300		1100	*	170	J	140	J
Sample wt (g):	30.0		30.0		30.0		30.0		30.0		30.0		30.0	
%Moisture:	20		20		21		12		12		10		11	
Dilution Factor:	2.0		1.0		1.0		1.0		2.0		1.0		1.0	
Level:	Low		Low		Low		Low		Low		Low		Low	
Number of TIC's:	17		17		13		30		20		30		30	

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-L39DL		FF-L40		FF-L40DL		FF-L41		FF-L42	
Phenol	1400	*	620		800	*	740		400	U
bis(2-Chloroethyl)ether	740	U *	350	U	690	U *	360	U	400	U
2-Chlorophenol	740	U *	350	U	690	U *	360	U	400	U
1,3-Dichlorobenzene	740	U *	350	U	690	U *	360	U	400	U
1,4-Dichlorobenzene	740	U *	350	U	690	U *	360	U	400	U
1,2-Dichlorobenzene	740	U *	350	U	690	U *	360	U	400	U
2-Methylphenol	150	*	17	J	690	U *	62	J	400	U
2,2'-Oxybis(1-chloropropane)	740	U *	350	U	690	U *	360	U	400	U
4-Methylphenol	58	*	14	J	690	U *	29	J	400	U
N-Nitroso-di-n-propylamine	740	U *	350	U	690	U *	360	U	400	U
Hexachloroethane	740	U *	350	U	690	U *	360	U	400	U
Nitrobenzene	740	U *	350	U	690	U *	360	U	400	U
Isophorone	740	U *	19	J	690	U *	18	J	400	U
2-Nitrophenol	740	U *	350	U	690	U *	360	U	400	U
2,4-Dimethylphenol	740	U *	350	U	690	U *	360	U	400	U
bis(2-Chloroethoxy)methane	740	U *	350	U	690	U *	360	U	400	U
2,4-Dichlorophenol	740	U *	350	U	690	U *	360	U	400	U
1,2,4-Trichlorobenzene	740	U *	22	J	690	U *	360	U	400	U
Naphthalene	600	*	140	J	160	*	520		400	U
4-Chloroaniline	740	U *	350	U	690	U *	360	U	400	U
Hexachlorobutadiene	740	U *	350	U	690	U *	360	U	400	U
4-Chloro-3-methylphenol	740	U *	350	U	690	U *	360	U	400	U
2-Methylnaphthalene	420	*	210	J	230	*	390		400	U
Hexachlorocyclopentadiene	740	U *	350	U	690	U *	360	U	400	U
2,4,6-Trichlorophenol	740	U *	350	U	690	U *	360	U	400	U
2,4,5-Trichlorophenol	1900	U *	870	U	1700	U *	910	U	1000	U
2-Chloronaphthalene	740	U *	350	U	690	U *	360	U	400	U
2-Nitroaniline	1900	U *	870	U	1700	U *	910	U	1000	U
Dimethylphthalate	740	U *	350	U	690	U *	360	U	400	U
Acenaphthylene	740	U *	350	U	690	U *	360	U	400	U
2,6-Dinitrotoluene	740	U *	350	U	690	U *	360	U	400	U
3-Nitroaniline	1900	U *	870	U	1700	U *	910	U	1000	U
Acenaphthene	34	*	45	J	50	*	360	U	400	U
2,4-Dinitrophenol	1900	U *	870	U	1700	U *	910	U	1000	U
4-Nitrophenol	1900	U *	870	U	1700	U *	910	U	1000	U
Dibenzofuran	150	*	62	J	70	*	74	J	400	U
2,4-Dinitrotoluene	740	U *	350	U	690	U *	360	U	400	U
Diethylphthalate	740	U *	350	U	690	U *	360	U	750	
4-Chlorophenyl-phenylether	740	U *	350	U	690	U *	360	U	400	U
Fluorene	95	*	41	J	35	*	13	J	400	U
4-Nitroaniline	1900	U *	870	U	1700	U *	910	U	1000	U
4,6-Dinitro-2-methylphenol	1900	U *	870	U	1700	U *	910	U	1000	U
N-Nitrosodiphenylamine	740	U *	350	U	690	U *	360	U	400	U
4-Bromophenyl-phenylether	740	U *	350	U	690	U *	360	U	400	U
Hexachlorobenzene	740	U *	350	U	690	U *	360	U	400	U
Pentachlorophenol	1900	U *	870	U	1700	U *	910	U	1000	U
Phenanthrene	620	*	500		570	*	280	J	33	J
Anthracene	110	*	83	J	100	*	54	J	400	U

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FF-L39DL		FF-L40		FF-L40DL		FF-L41		FF-L42			
Carbazole	740	U *	41	J	49	*	360	U	400	U		
Di-n-butylphthalate	100	*	470		630	*	360	U	140	B J		
Fluoranthene	180	*	890		1100	*	150	J	67	J		
Pyrene	240	*	1100		1300	*	140	J	66	J		
Butylbenzylphthalate	740	U *	24	J	690	U *	360	U	28	J		
3,3'-Dichlorobenzidine	740	U *	350	U	690	U *	360	U	400	U		
Benzo(a)anthracene	160	*	1500		1500	*	140	J	35	J		
Chrysene	260	*	1600		2000	*	200	J	44	J		
bis(2-Ethylhexyl)phthalate	4200	J^	120	J	140	*	140	J	60	J		
Di-n-octylphthalate	740	U *	350	U	690	U *	360	U	400	U		
Benzo(b)fluoranthene	170	*	3700	*	3700		170	J	69	J		
Benzo(k)fluoranthene	57	*	1100		1300	*	65	J	31	J		
Benzo(a)pyrene	110	*	2100		2400	*	110	J	44	J		
Indeno(1,2,3-cd)pyrene	110	*	3500	*	3700		140	J	73	J		
Dibenz(a,h)anthracene	41	*	1000		1100	*	48	J	23	J		
Benzo(g,h,i)perylene	190	*	4000	*	4400		220	J	69	J		
Sample wt (g):	30.0		30.0		30.0		30.0		30.0			
%Moisture:	11		5		5		9		18			
Dilution Factor:	2.0		1.0		2.0		1.0		1.0			
Level:	Low		Low		Low		Low		Low			
Number of TIC's:	30		30		30		30		28			

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs	FF-L28	FLAG	FF-L29	FLAG	FF-L30	FLAG	FF-L31	FLAG	FF-L32	FLAG	FF-L33	FLAG	FF-L34	FLAG
EPA SAMPLE NUMBER:	FF-L28		FF-L29		FF-L30		FF-L31		FF-L32		FF-L33		FF-L34	
alpha-BHC	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
beta-BHC	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
delta-BHC	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
gamma-BHC (lindane)	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
Heptachlor	2.2	U	0.57	J	2.2	U	2.2	U	2.5	U	2.2	U	1.1	J
Aldrin	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
Heptachlor epoxide	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	3.1	J
Endosulfan I	2.2	U	2.4	U	2.2	U	2.2	U	2.5	U	2.2	U	2.1	U
Dieldrin	4.2	U	4.0	J	0.45	J	4.3	U	0.90	J	1.3	J	24	U
4,4'-DDE	1.2	J	2.8	J	4.3	U	4.3	U	4.8	U	0.51	J	23	JN
Endrin	4.2	U	6.3	J	4.3	U	4.3	U	4.8	U	4.2	U	17	U
Endosulfan II	4.2	U	4.7	U	4.3	U	4.3	U	4.8	U	4.2	U	4.1	U
4,4'-DDD	0.74	J	2.3	J	4.3	U	4.3	U	4.8	U	4.2	U	4.9	JN
Endosulfan sulfate	4.2	U	2.1	J	4.3	U	4.3	U	4.8	U	4.2	U	2.4	J
4,4'-DDT	1.9	J	5.9	J	4.3	U	4.3	U	0.67	J	0.39	J	19	JN
Methoxychlor	7.3	J	20	J	22	U	22	U	25	U	22	U	130	JN
Endrin ketone	4.2	U	2.7	J	4.3	U	4.3	U	4.8	U	4.2	U	12	JN
Endrin aldehyde	4.2	U	4.7	U	4.3	U	4.3	U	4.8	U	4.2	U	4.1	UJv
alpha-Chlordane	2.0	J	2.1	J	0.19	J	0.32	J	0.24	J	1.3	J	9.4	J
gamma-Chlordane	2.3		2.7		0.17	J	0.37	J	0.5	U	0.86	J	9.1	
Toxaphene	220	U	240	U	220	U	220	U	250	U	220	U	210	U
Aroclor-1016	42	U	47	U	43	U	43	U	48	U	42	U	41	U
Aroclor-1221	85	U	96	U	88	U	88	U	97	U	86	U	84	U
Aroclor-1232	42	U	47	U	43	U	43	U	48	U	42	U	41	U
Aroclor-1242	42	U	47	U	43	U	43	U	48	U	42	U	41	U
Aroclor-1248	42	U	47	U	43	U	43	U	48	U	42	U	41	U
Aroclor-1254	42	U	47	U	43	U	43	U	48	U	42	U	41	U
Aroclor-1260	56		47	U	43	U	43	U	48	U	42	U	340	J
Sample wt (g):	30.0		30.0		30.0		30.0		30.0		30.0		30.0	
%Moisture:	21		30		24		24		31		22		20	
Dilution Factor:	1.0		1.0		1.0		1.0		1.0		1.0		1.0	

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 | SDG: FFL28 | Reviewer: T. Fan/M. Missler

Laboratory: DATAC | Matrix: SOIL | Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	50-1 FLAG	50-2 FLAG	50-3 FLAG	50-4 FLAG
EPA SAMPLE NUMBER:	FF-L35	FF-L36	FF-L37	FF-L38	FF-L39	FF-L40	FF-L41
alpha-BHC	2.1 U	0.23 J	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
beta-BHC	2.1 U	2.2 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
delta-BHC	2.1 U	2.2 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
gamma-BHC (lindane)	2.1 U	2.2 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
Heptachlor	1.1 J	0.20 J	1.5 J	1.3 J	1.2 J	0.73 J	1.9 U
Aldrin	2.1 U	2.2 U	1.9 U	1.9 U	1.9 U	1.8 U	3.2 J
Heptachlor epoxide	1.5 J	0.69 J	3.1 J	1.9 U	0.44 J	1.8 U	1.9 U
Endosulfan I	2.1 U	2.2 U	1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
Dieldrin	9.0 J	2.8 J	13 J	1.6 J	0.81 J	3.5 U	0.59 J
4,4'-DDE	6.4 J	2.5 J	4.1 J	3.6 J	3.7 U	1.0 J	3.6 U
Endrin	4.1 U	4.2 U	3.7 U	3.7 U	3.1 J	3.5 U	2.9 J
Endosulfan II	4.1 U	4.2 U	3.7 U	3.7 U	3.7 U	3.5 U	3.6 U
4,4'-DDD	4.1 U	4.9 J	2.0 J	2.1 J	1.5 J	3.5 U	2.2 J
Endosulfan sulfate	4.2 J	4.2 U	1.9 J	5.0 J	3.2 J	5.2 J	6.7 J
4,4'-DDT	7.3 J	4.4 J	5.5 J	7.9	5.3	3.5 U	5.5 J
Methoxychlor	53 J	9.9 J	20 J	37 J	29 J	25 JN	13 J
Endrin ketone	8.1 J	2.4 J	3.7 J	7.7 J	1.1 J	4.8 JN	3.4 J
Endrin aldehyde	4.1 U	4.2 U	3.7 U	3.7 U	3.7 U	3.5 UJv	3.6 U
alpha-Chlordane	7.2 J	2.1 J	7.4 J	1.9 U	0.55 J	1.8 U	1.1 J
gamma-Chlordane	8.0	3.1	9.2	1.9 U	1.8 J	1.8 U	2.4
Toxaphene	210 U	220 U	190 U	190 U	190 U	180 U	190 U
Aroclor-1016	41 U	42 U	37 U	37 U	37 U	35 U	36 U
Aroclor-1221	84 U	86 U	76 U	74 U	75 U	71 U	74 U
Aroclor-1232	41 U	42 U	37 U	37 U	37 U	35 U	36 U
Aroclor-1242	41 U	42 U	37 U	37 U	37 U	35 U	36 U
Aroclor-1248	41 U	42 U	37 U	37 U	37 U	35 U	36 U
Aroclor-1254	41 U	42 U	37 U	37 U	37 U	35 U	36 U
Aroclor-1260	41 UJ	42 U	37 UJ	37 U	37 U	73 J	36 U
Sample wt (g):	30.0	30.0	30.0	30.0	30.0	30.0	30.0
%Moisture:	20	22	12	10	11	5	9
Dilution Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25393 SDG: FFL28 Reviewer: T. Fan/M. Missler

Laboratory: DATAC Matrix: SOIL Units: ug/Kg

PESTICIDES/PCBs		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FF-L42													
alpha-BHC	2.1	U												
beta-BHC	2.1	U												
delta-BHC	2.1	U												
gamma-BHC (lindane)	2.1	U												
Heptachlor	2.1	U												
Aldrin	2.1	U												
Heptachlor epoxide	2.1	U												
Endosulfan I	2.1	U												
Dieldrin	4.0	U												
4,4'-DDE	4.0	U												
Endrin	0.86	J												
Endosulfan II	4.0	U												
4,4'-DDD	4.0	U												
Endosulfan sulfate	4.0	U												
4,4'-DDT	4.0	U												
Methoxychlor	21	U												
Endrin ketone	4.0	U												
Endrin aldehyde	4.0	U												
alpha-Chlordane	2.1	U												
gamma-Chlordane	2.1	U												
Toxaphene	210	U												
Aroclor-1016	40	U												
Aroclor-1221	82	U												
Aroclor-1232	40	U												
Aroclor-1242	40	U												
Aroclor-1248	40	U												
Aroclor-1254	40	U												
Aroclor-1260	40	U												
Sample wt (g):	30.0													
%Moisture:	18													
Dilution Factor:	1.0													

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

ase No. 25393 SDG No. FFL28 SDG Nos. To Follow SAS No. Date Rec 05/15/97

EPA Lab ID: DATAC
Lab Location: Salt Lake City, UT 84123
Region: 6 Audit No.: 25393/FFL28
Re_Submitted CSF? Yes ____ No X
Box No(s): 1
COMMENTS:

3 The DCL Sample Work Orders were pages 1999-2002.

3* The airbill stickers were absent from the CSF data package.

* The laboratory was contacted for this deficiency.

ver for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?		X	
14. Signed?			X
15. Dated?			X
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

	Signature	Printed Name/Title	Date
udited by:	Maria Missler	Maria Missler / ESAT Data Reviewer	5/28/97
udited by:			
Audited by:			

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ______ Date Entered: ______ Date Reviewed: ______

Entered by: ______ ______

Reviewed by: ______ ______

Signature Printed Name/Title

Lockheed Martin Services Group
ESAT Region 6

10101 Southwest Freeway, Suite 500, Houston, TX 77074
Tel:(713) 988-2995

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Richard Wade

Firm DATAC

Address 960 West LeVoy Dr.

City Salt Lake City **State** UT 84123

Telephone (801) 266-7700 **Ext.** ______

Fax Telephone (801) 268-9992 **Ext.** ______

Sender:

Name Maria Missler

Date June 2, 1997

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 988-2995

MESSAGES: Resubmission request for Case 25393 SDG: FFL28 (O-1821)

Fax Model No. Brother Intelifax, Fax No. 713-988-2994

In Reference to Case No(s): 25393 SDG: FFL28 (O-1821)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: June 2, 1997
Laboratory Name: DATAC
Lab Contact: Richard Wade

Region: 6
Regional Contact: Maria Missler - ESAT

FAX initiated by: ______Laboratory ___X___Region

In reference to data for the following fractions:

CSF Deliverable Pest/PCB

Summary of Questions/Issues:

CSF Deliverable

Forms DC-1 (pages 1995 and 1996) indicated the presence of airbill stickers, but no airbills or airbill stickers were submitted with the CSF data package (OLM03.0, B-28, 2.7.2.2). Please submit these missing documents.

Pest/PCB

1. Samples FF-L35 and FF-L37: In the reviewer's opinion, aroclor 1260 may be present in these samples above the CRQL's but was not reported (OLM03.0, D-62/PEST, 11.1.1). Please check your data for the presence of this analyte. If necessary revise and resubmit associated forms and raw data or explain.

2. Form III Pest-2, page 1266; The values reported under the spike added, sample concentration, MS concentration, and MSD concentration columns were 10X too high. Please calculate these concentrations following OLM03.0, B-45, 3.8 and resubmit this form.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact DATAC / Richard Wade
In Reference To Case No. 25393 **SDG:** FFL28

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-29), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 7 days** to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2995.

Maria Missler
Signature

June 2, 1997
Date

Distribution: (1) Lab Copy (2) Region Copy

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25393

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC		Airborne Express

Regional Information

Sampler (Name): J.D. Thompson

Airbill Number: 6063336635

Non-Superfund Program

Sampler Signature: James D. [signature]

5. Ship To: Datachem Laboratories 960 West Levoy Drive Salt Lake, City, UT 84123 ATTN: Scott Saulls

Site Name: Trinity Valley Iron

City, State: Ft. Worth, TX

Site Spill ID

3. Purpose*
Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED
Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI
Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample
FFL28	5	low	grab	5	X				6-161101 - 102	SE-1	4/8/97 0930	MFHE85	JT	—
FFL29	5	low	grab	5	X				6-161107 - 108	SE-2	4/8/97 0936	MFHE86	JT	—
FFL30	5	low	grab	5	X				6-161113 - 114	SE-3	4/8/97 0911	MFHE87	JT	—
FFL31	5	low	grab	5	X				6-161119 - 120	SE-4	4/8/97 0952	MFHE88	JT	—
FFL32	5	low	grab	5	X				6-161125 - 126	SE-5	4/8/97 1009	MFHE89	JT	—
FFL33	5	low	grab	5	X				6-161131 - 132	SE-6	4/8/97 1018	MFHE90	JT	—
FFL34	5	low	grab	5	X				6-161137 - 138	SE-7	4/8/97 1151	MFHE91	JT	—
FFL35	5	low	grab	5	X				6-161143 - 144	SE-8	4/8/97 1215	MFHE92	JT	—
FFL36	5	low	grab	5	X				6-161149 - 150	SE-9	4/8/97 1055	MFHE93	JT	—
FFL37	5	low	grab	5	X				6-161155 - 156	SE-10	4/8/97 1158	MFHE94	JT	D(FFL34)

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Judie Mattocks	4/8/97 1730				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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EPA Form 9110-2

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV.

365575

2

EPA

United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25393

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	4/8/97	Airborne Express

Regional Information:

Sampler (Name): J.D. Thompson

Airbill Number: 6063336731

Non-Superfund Program:

Sampler Signature: [signature]

3. Purpose*
- Lead: ☒ SF, ☐ PRP, ☐ ST, ☐ FED
- Early Action: ☐ CLEM, ☐ PA, ☐ REM, ☐ RI, ☒ SI, ☐ ESI
- Long-Term Action: ☐ FS, ☐ RD, ☐ RA, ☐ O&M, ☐ NPLD

5. Ship To: Datachem Laboratories
960 West Levoy Drive
Salt Lake City, UT 84123
ATTN: Scott Saulls

Site Name: Trinity Valley Iron

City, State: Ft. Worth, TX

Site Spill ID:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFL28	5	low	grab	5		X	X		6-16/103 - 104	SE-1	4/8/97 0930	MFHE85	JT	—
FFL29	5	low	grab	5		X	X		6-16/109 - 110	SE-2	4/8/97 0936	MFHE86	JT	—
FFL30	5	low	grab	5		X	X		6-16/115 - 116	SE-3	4/8/97 0911	MFHE87	JT	—
FFL31	5	low	grab	5		X	X		6-16/121 - 122	SE-4	4/8/97 0952	MFHE88	JT	—
FFL32	5	low	grab	5		X	X		6-16/127 - 128	SE-5	4/8/97 1009	MFHE89	JT	—
FFL33	5	low	grab	5		X	X		6-16/133 - 134	SE-6	4/8/97 1018	MFHE90	JT	—
FFL34	5	low	grab	5		X	X		6-16/139 - 140	SE-7	4/8/97 1151	MFHE91	JT	—
FFL35	5	low	grab	5		X	X		6-16/145 - 146	SE-8	4/8/97 1215	MFHE92	JT	—
FFL36	5	low	grab	5		X	X		6-16/151 - 152	SE-9	4/8/97 1055	MFHE93	JT	—
FFL37	5	low	grab	5		X	X		6-16/157 - 158	SE-10	4/8/97 1158	MFHE94	JT	D(FFL34)

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Judie Mattocks	4/8/97 1730				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none

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[redacted]

#5

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25393

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	4/8/97	Airborne Express

Regional Information

Sampler (Name): J. D. Thompson

Airbill Number: 606336834

Non-Superfund Program

Sampler Signature

5. Ship To: Datachem Laboratories, 960 West Levoy Drive, Salt Lake City, UT 84123 ATTN: Scott Saulls

Site Name: Trinity Valley Iron

City, State: Ft. Worth, TX

Site Spill ID

3. Purpose*: Lead: [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
FFL38	5	low	grab	5	X	X	X		6-161161 - 164	SO-1	4/8/97 1338	MFHE95	JT	—
FFL39	5	low	grab	5	X	X	X		6-161167 - 170	SO-2	4/8/97 1400	MFHE96	JT	—
FFL40	5	low	grab	5	X	X	X		6-161173 - 176	SO-3	4/8/97 1416	MFHE97	JT	—
FFL41	5	low	grab	5	X	X	X		6-161179 - 182	SO-4	4/8/97 1408	MFHE98	JT	D(FFL39)
FFL42	5	low	grab	5	X	X	X		6-161185 - 188	SO-5	4/8/97 1041	MFHE99	JT	—

Shipment for Case Complete? (Y/N): Y

Page 1 of 1

Sample(s) to be Used for Laboratory QC: FFL38

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Judie Mattocks	4/8/97 1730				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

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EPA Form 9110-2

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL28

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01686

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC19C686

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 25 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ________ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL29

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01687

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC20C687

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 34 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	120	
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	5	J
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (total)	15	U

041

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL30

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01688

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC21C688

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 24 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL31

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01689

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC22C689

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 33 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	63	
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	3	J
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (total)	15	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL32

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01690

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC23C690

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 34 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (total)	15	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL33

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01691

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC33C691

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 28 Date Analyzed: 04/16/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	0.9	BJ
67-64-1	Acetone	24	
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	14	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01692

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: MC25C692

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: not dec. 20   Date Analyzed: 04/15/97

GC Column: CAP   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ______ (uL)   Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	0.5	J
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	0.6	BJ

073

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL35

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01693

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: MC26C693

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: not dec. 20   Date Analyzed: 04/15/97

GC Column: CAP   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ______ (uL)   Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01694

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC37C694

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 24 Date Analyzed: 04/17/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ________ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC38C695

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 12 Date Analyzed: 04/17/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	0.4	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC18C696

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 10 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	0.8	BJ
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC29C697

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 11 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	0.9	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39RE

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC39C697

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 11 Date Analyzed: 04/17/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC30C698

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 5 Date Analyzed: 04/16/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	53	
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL41

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC31C699

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 9 Date Analyzed: 04/16/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ________ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL41RE

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC40C699

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 9 Date Analyzed: 04/17/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL42

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01700

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: MC32C700

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: not dec. 18   Date Analyzed: 04/16/97

GC Column: CAP   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ______ (uL)   Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	0.9	BJ
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ____   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: BL-133131-1

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: MC13BLK

Level: (low/med) LOW   Date Received: ____

% Moisture: not dec. ____   Date Analyzed: 04/15/97

GC Column: CAP   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ____ (uL)   Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	0.9	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	0.5	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: BL-133131-2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC36BLK

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 04/17/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	0.8	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	0.4	J
1330-20-7	Xylene (total)	0.8	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK01

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: BL-133131-3

Sample wt/vol: 5.0 (g/mL) G   Lab File ID: MC41HBLK

Level: (low/med) LOW   Date Received: ______

% Moisture: not dec. ____   Date Analyzed: 04/17/97

GC Column: CAP   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ______ (uL)   Soil Aliquot Volume: ______ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC16S696

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 10 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	0.8	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	53	
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	45	
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	66	
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	69	
108-90-7	Chlorobenzene	54	
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MSD

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MSD

Sample wt/vol: 5.0 (g/mL) G Lab File ID: MC17D696

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: not dec. 10 Date Analyzed: 04/15/97

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	50	
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	43	
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	67	
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	70	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL28

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01686

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV08C86

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	24	J
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL28

ab Name: DATACHEM LABS Contract: 68D50017

ab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

atrix: (soil/water) SOIL Lab Sample ID: 97C01686

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV08C86

evel: (low/med) LOW Date Received: 04/09/97

Moisture: 20 decanted: (Y/N) Y Date Extracted: 04/18/97

oncentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/97

njection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	28	J
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	120	BJ
206-44-0	Fluoranthene	59	J
129-00-0	Pyrene	70	J
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	26	J
218-01-9	Chrysene	36	J
117-81-7	bis(2-Ethylhexyl)phthalate	33	J
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	45	J
207-08-9	Benzo(k)fluoranthene	15	J
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL29

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01687

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTV09C87

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 30   decanted: (Y/N) Y   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.2

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
108-95-2	Phenol	160	J
111-44-4	bis(2-Chloroethyl)ether	470	U
95-57-8	2-Chlorophenol	470	U
541-73-1	1,3-Dichlorobenzene	470	U
106-46-7	1,4-Dichlorobenzene	470	U
95-50-1	1,2-Dichlorobenzene	470	U
95-48-7	2-Methylphenol	470	U
108-60-1	2,2'-oxybis(1-Chloropropane)	470	U
106-44-5	4-Methylphenol	130	J
621-64-7	N-Nitroso-di-n-propylamine	470	U
67-72-1	Hexachloroethane	470	U
98-95-3	Nitrobenzene	470	U
78-59-1	Isophorone	470	U
88-75-5	2-Nitrophenol	470	U
105-67-9	2,4-Dimethylphenol	470	U
111-91-1	bis(2-Chloroethoxy)methane	470	U
120-83-2	2,4-Dichlorophenol	470	U
120-82-1	1,2,4-Trichlorobenzene	470	U
91-20-3	Naphthalene	560	
106-47-8	4-Chloroaniline	470	U
87-68-3	Hexachlorobutadiene	470	U
59-50-7	4-Chloro-3-methylphenol	470	U
91-57-6	2-Methylnaphthalene	1000	
77-47-4	Hexachlorocyclopentadiene	470	U
88-06-2	2,4,6-Trichlorophenol	470	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	470	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	470	U
208-96-8	Acenaphthylene	470	U
606-20-2	2,6-Dinitrotoluene	470	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	21	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL29

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01687

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV09C87

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 30 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200	U
100-02-7	4-Nitrophenol	1200	U
132-64-9	Dibenzofuran	470	U
121-14-2	2,4-Dinitrotoluene	470	U
84-66-2	Diethylphthalate	470	U
7005-72-3	4-Chlorophenyl-phenylether	470	U
86-73-7	Fluorene	25	J
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	N-Nitrosodiphenylamine (1)	470	U
101-55-3	4-Bromophenyl-phenylether	470	U
118-74-1	Hexachlorobenzene	470	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	320	J
120-12-7	Anthracene	35	J
86-74-8	Carbazole	470	U
84-74-2	Di-n-butylphthalate	190	BJ
206-44-0	Fluoranthene	470	J
129-00-0	Pyrene	540	
85-68-7	Butylbenzylphthalate	470	U
91-94-1	3,3'-Dichlorobenzidine	470	U
56-55-3	Benzo(a)anthracene	190	J
218-01-9	Chrysene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
117-84-0	Di-n-octylphthalate	470	U
205-99-2	Benzo(b)fluoranthene	290	J
207-08-9	Benzo(k)fluoranthene	110	J
50-32-8	Benzo(a)pyrene	180	J
193-39-5	Indeno(1,2,3-cd)pyrene	170	J
53-70-3	Dibenz(a,h)anthracene	470	U
191-24-2	Benzo(g,h,i)perylene	170	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL29

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01687

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV09C87

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 30 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 24

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.37	420	ABJ
2.	ALDOL CONDENSATION PRODUCT	4.46	320	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.71	2300	AJ
4.	ACP + AROMATIC	4.84	810	AJ
5.	ALDOL CONDENSATION PRODUCT	4.88	310	AJ
6.	C3 ALKYL BENZENE	5.06	140	J
7.	OXY HETEROCYCLE	5.12	150	J
8.	ALDOL CONDENSATION PRODUCT	5.26	1100	AJ
9.	DIETHYL BENZENE	5.32	250	J
10. 98-86-2	ACETOPHENONE	5.43	120	JN
11.	C4 ALKYL BENZENE	5.52	200	J
12.	C4 ALKYL BENZENE	5.89	270	J
13.	DIHYDRO METHYL INDENDE	6.10	190	J
14.	ALKYL BENZENE	6.19	330	J
15.	DIHYDRO DIMETHYL INDENE	7.12	130	J
16. 90-12-0	NAPHTHALENE, 1-METHYL-	7.83	350	JN
17.	DIMETHYL NAPHTHALENE	8.75	270	J
18.	DIMETHYL NAPHTHALENE	8.89	280	J
19.	DIMETHYL NAPHTHALENE	8.94	130	J
20.	DIMETHYL NAPHTHALENE	9.11	140	J
21.	ALKYL PHENOL	12.17	110	J
22.	UNK. PHTHALATE ESTER	13.06	9700	J
23.	UNSATURATED ACID + PNA	13.66	310	J
24.	UNSATURATED ACID	15.15	460	J

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL30

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01688

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV10C88

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 24 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL30

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01688

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV10C88

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 24 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	22	J
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	180	BJ
206-44-0	Fluoranthene	47	J
129-00-0	Pyrene	40	J
85-68-7	Butylbenzylphthalate	57	J
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	24	J
218-01-9	Chrysene	41	J
117-81-7	bis(2-Ethylhexyl)phthalate	30	J
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	34	J
207-08-9	Benzo(k)fluoranthene	17	J
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL30

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01688

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV10C88

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 24 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.37	1000	ABJ
2.	ALDOL CONDENSATION PRODUCT	4.46	420	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.70	1400	AJ
4.	ALDOL CONDENSATION PRODUCT	4.84	330	AJ
5.	ALDOL CONDENSATION PRODUCT	4.89	160	AJ
6.	OXY HETEROCYCLE	5.13	210	J
7.	ALDOL CONDENSATION PRODUCT	5.27	1900	AJ
8. 98-86-2	ACETOPHENONE	5.43	160	JN
9.	OXY HETEROCYCLE	6.25	240	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FFL31

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01689

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: OTV11C89

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 24   decanted: (Y/N) Y   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	57	J
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL31

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01689

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV11C89

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 24 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	19	J
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	180	BJ
206-44-0	Fluoranthene	37	J
129-00-0	Pyrene	38	J
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	15	J
218-01-9	Chrysene	21	J
117-81-7	bis(2-Ethylhexyl)phthalate	37	J
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL32

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01690

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV12C90

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 31 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	480	U
111-44-4	bis(2-Chloroethyl)ether	480	U
95-57-8	2-Chlorophenol	480	U
541-73-1	1,3-Dichlorobenzene	480	U
106-46-7	1,4-Dichlorobenzene	480	U
95-50-1	1,2-Dichlorobenzene	480	U
95-48-7	2-Methylphenol	480	U
108-60-1	2,2'-oxybis(1-Chloropropane)	480	U
106-44-5	4-Methylphenol	480	U
621-64-7	N-Nitroso-di-n-propylamine	480	U
67-72-1	Hexachloroethane	480	U
98-95-3	Nitrobenzene	480	U
78-59-1	Isophorone	480	U
88-75-5	2-Nitrophenol	480	U
105-67-9	2,4-Dimethylphenol	480	U
111-91-1	bis(2-Chloroethoxy)methane	480	U
120-83-2	2,4-Dichlorophenol	480	U
120-82-1	1,2,4-Trichlorobenzene	480	U
91-20-3	Naphthalene	480	U
106-47-8	4-Chloroaniline	480	U
87-68-3	Hexachlorobutadiene	480	U
59-50-7	4-Chloro-3-methylphenol	480	U
91-57-6	2-Methylnaphthalene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U
88-06-2	2,4,6-Trichlorophenol	480	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	480	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	480	U
208-96-8	Acenaphthylene	480	U
606-20-2	2,6-Dinitrotoluene	480	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	480	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL32

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01690

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV12C90

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 31 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200	U
100-02-7	4-Nitrophenol	1200	U
132-64-9	Dibenzofuran	480	U
121-14-2	2,4-Dinitrotoluene	480	U
84-66-2	Diethylphthalate	480	U
7005-72-3	4-Chlorophenyl-phenylether	480	U
86-73-7	Fluorene	480	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	N-Nitrosodiphenylamine (1)	480	U
101-55-3	4-Bromophenyl-phenylether	480	U
118-74-1	Hexachlorobenzene	480	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	23	J
120-12-7	Anthracene	480	U
86-74-8	Carbazole	480	U
84-74-2	Di-n-butylphthalate	160	BJ
206-44-0	Fluoranthene	60	J
129-00-0	Pyrene	58	J
85-68-7	Butylbenzylphthalate	480	U
91-94-1	3,3'-Dichlorobenzidine	480	U
56-55-3	Benzo(a)anthracene	27	J
218-01-9	Chrysene	38	J
117-81-7	bis(2-Ethylhexyl)phthalate	37	J
117-84-0	Di-n-octylphthalate	480	U
205-99-2	Benzo(b)fluoranthene	50	J
207-08-9	Benzo(k)fluoranthene	17	J
50-32-8	Benzo(a)pyrene	480	U
193-39-5	Indeno(1,2,3-cd)pyrene	480	U
53-70-3	Dibenz(a,h)anthracene	480	U
191-24-2	Benzo(g,h,i)perylene	480	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL32

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01690

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTV12C90

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 31   decanted: (Y/N) Y   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.3

umber TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.28	250	J
2.	ALDOL CONDENSATION PRODUCT	4.37	920	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.46	250	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.70	1700	AJ
5.	ALDOL CONDENSATION PRODUCT	4.83	290	AJ
6.	ALDOL CONDENSATION PRODUCT	4.88	170	AJ
7.	ALDOL CONDENSATION PRODUCT	5.28	2400	AJ
8. 98-86-2	ACETOPHENONE	5.43	170	JN
9.	OXY HETEROCYCLE	6.25	340	J
10. 57-10-3	HEXADECANOIC ACID	13.81	160	JN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL33

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01691

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV13C91

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 22 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	420	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL33

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01691

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV13C91

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 22 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	31	J
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butylphthalate	300	BJ
206-44-0	Fluoranthene	68	J
129-00-0	Pyrene	70	J
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	28	J
218-01-9	Chrysene	47	J
117-81-7	bis(2-Ethylhexyl)phthalate	180	J
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	53	J
207-08-9	Benzo(k)fluoranthene	21	J
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenz(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL33

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01691

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV13C91

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 22 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.28	130	J
2.	ALDOL CONDENSATION PRODUCT	4.37	580	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.46	390	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.69	1300	AJ
5.	ALDOL CONDENSATION PRODUCT	4.84	600	AJ
6.	ALDOL CONDENSATION PRODUCT	4.89	180	AJ
7.	ALDOL CONDENSATION PRODUCT	5.28	1800	AJ
8.	ALCOHOL ACETATE	5.95	100	J
9.	OXY HETEROCYCLE	6.24	250	J
10. 57-10-3	HEXADECANOIC ACID	13.81	130	JN

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01692

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTV14C92

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 20   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	58	J
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	13	J
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	35	J
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	39	J
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	240	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01692

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV14C92

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	160	J
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	15	J
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	380	J
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	3600	E
120-12-7	Anthracene	640	
86-74-8	Carbazole	510	
84-74-2	Di-n-butylphthalate	200	BJ
206-44-0	Fluoranthene	4300	E
129-00-0	Pyrene	4400	E
85-68-7	Butylbenzylphthalate	56	J
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	2600	
218-01-9	Chrysene	3000	
117-81-7	bis(2-Ethylhexyl)phthalate	220	J
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	2900	
207-08-9	Benzo(k)fluoranthene	840	
50-32-8	Benzo(a)pyrene	2000	
193-39-5	Indeno(1,2,3-cd)pyrene	2400	
53-70-3	Dibenz(a,h)anthracene	590	
191-24-2	Benzo(g,h,i)perylene	2200	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL34

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01692

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: OTV14C92

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 20   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.3

Number TICs found: 29

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.13	450	AJ
2.	UNSATURATED OXY HYDROCARBON	4.28	540	J
3.	ALDOL CONDENSATION PRODUCT	4.37	630	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.46	220	ABJ
5.	UNKNOWN ACID ESTER	4.52	340	J
6.	ALDOL CONDENSATION PRODUCT	4.71	2100	AJ
7.	ALDOL CONDENSATION PRODUCT	4.89	140	AJ
8.	UNKNOWN KETONE	5.13	190	J
9.	ALDOL CONDENSATION PRODUCT	5.27	1800	AJ
10.	OXY HETEROCYLE	5.40	140	J
11. 65-85-0	BENZOIC ACID	6.09	190	JN
12.	OXY HETEROCYCLE	6.24	110	J
13. 7320-53-8	DIBENZOFURAN, 4-METHYL-	10.94	140	JN
14. 84-65-1	9,10-ANTHRACENEDIONE	14.26	100	JN
15. 5737-13-3	CYCLOPENTA(DEF)PHENANTHRENON	14.83	130	JN
16.	OXY AROMATIC COMPOUND	15.20	190	J
17. 243-42-5	BENZO[B]NAPHTHO[2,3-D]FURAN	15.51	150	JN
18.	PNA, MW= 216	15.65	190	J
19.	PNA, MW= 216	15.80	280	J
20.	PNA, MW= 216	15.89	150	J
21.	UNKNOWN PNA	15.93	100	J
22. 239-35-0	BENZO[B]NAPHTHO[2,1-D]THIOPH	16.58	130	JN
23.	PNA, MW= 228	16.63	240	J
24.	PNA, MW= 228	17.06	110	J
25.	PNA, MW= 240	17.71	170	J
26. 192-97-2	BENZO[E]PYRENE	19.07	1400	JN
27.	PNA, MW= 252	19.34	630	J
28.	UNKNOWN PNA	20.64	690	J
29.	PNA, MW= 278	22.49	670	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34DL

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01692DL

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: OTX04C92

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 20   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/30/97

Injection Volume: 2.0(uL)   Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y   pH: 7.3

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	58	DJ
111-44-4	bis(2-Chloroethyl)ether	820	U
95-57-8	2-Chlorophenol	820	U
541-73-1	1,3-Dichlorobenzene	820	U
106-46-7	1,4-Dichlorobenzene	820	U
95-50-1	1,2-Dichlorobenzene	820	U
95-48-7	2-Methylphenol	820	U
108-60-1	2,2'-oxybis(1-Chloropropane)	820	U
106-44-5	4-Methylphenol	820	U
621-64-7	N-Nitroso-di-n-propylamine	820	U
67-72-1	Hexachloroethane	820	U
98-95-3	Nitrobenzene	820	U
78-59-1	Isophorone	820	U
88-75-5	2-Nitrophenol	820	U
105-67-9	2,4-Dimethylphenol	820	U
111-91-1	bis(2-Chloroethoxy)methane	820	U
120-83-2	2,4-Dichlorophenol	820	U
120-82-1	1,2,4-Trichlorobenzene	820	U
91-20-3	Naphthalene	820	U
106-47-8	4-Chloroaniline	820	U
87-68-3	Hexachlorobutadiene	820	U
59-50-7	4-Chloro-3-methylphenol	820	U
91-57-6	2-Methylnaphthalene	26	DJ
77-47-4	Hexachlorocyclopentadiene	820	U
88-06-2	2,4,6-Trichlorophenol	820	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	820	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	820	U
208-96-8	Acenaphthylene	820	U
606-20-2	2,6-Dinitrotoluene	820	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	180	DJ

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01692DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX04C92

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	120	DJ
121-14-2	2,4-Dinitrotoluene	820	U
84-66-2	Diethylphthalate	820	U
7005-72-3	4-Chlorophenyl-phenylether	820	U
86-73-7	Fluorene	300	DJ
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	820	U
101-55-3	4-Bromophenyl-phenylether	820	U
118-74-1	Hexachlorobenzene	820	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	2900	D
120-12-7	Anthracene	510	DJ
86-74-8	Carbazole	410	DJ
84-74-2	Di-n-butylphthalate	160	BDJ
206-44-0	Fluoranthene	3800	D
129-00-0	Pyrene	3600	D
85-68-7	Butylbenzylphthalate	42	DJ
91-94-1	3,3'-Dichlorobenzidine	820	U
56-55-3	Benzo(a)anthracene	2000	D
218-01-9	Chrysene	2100	D
117-81-7	bis(2-Ethylhexyl)phthalate	180	DJ
117-84-0	Di-n-octylphthalate	820	U
205-99-2	Benzo(b)fluoranthene	2500	D
207-08-9	Benzo(k)fluoranthene	760	DJ
50-32-8	Benzo(a)pyrene	1600	D
193-39-5	Indeno(1,2,3-cd)pyrene	1400	D
53-70-3	Dibenz(a,h)anthracene	370	DJ
191-24-2	Benzo(g,h,i)perylene	1300	D

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL34DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01692DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX04C92

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 17

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.26	320	J
2.	ALDOL CONDENSATION PRODUCT	4.35	400	ABJ
3.	UNKNOWN ACID ESTER	4.49	340	J
4.	ALDOL CONDENSATION PRODUCT	4.66	2000	AJ
5.	ALDOL CONDENSATION PRODUCT	5.24	1800	AJ
6. 132-65-0	DIBENZOTHIOPHENE	12.29	310	JN
7.	PNA, MW= 192	13.58	240	J
8.	PNA, MW= 192	13.63	350	J
9. 84-65-1	9,10-ANTHRACENEDIONE	14.24	550	JN
10.	PNA, MW= 206	14.50	170	J
11. 40487-42-1	PENOXALINE	14.58	180	JN
12.	UNKNOWN PNA	14.70	270	J
13.	PNA, MW= 216	15.63	210	J
14.	PNA, MW= 216	15.78	300	J
15.	UNKNOWN PNA	16.62	240	J
16. 192-97-2	BENZO[E]PYRENE	19.03	690	JN
17.	UNKNOWN PNA	20.59	320	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ________ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01693

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV15C93

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	73	J
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	65	J
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	56	J
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	48	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ________ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01693

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV15C93

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	36	J
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	68	J
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	730	
120-12-7	Anthracene	110	J
86-74-8	Carbazole	93	J
84-74-2	Di-n-butylphthalate	200	BJ
206-44-0	Fluoranthene	1000	
129-00-0	Pyrene	980	
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	560	
218-01-9	Chrysene	690	
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	670	
207-08-9	Benzo(k)fluoranthene	270	J
50-32-8	Benzo(a)pyrene	480	
193-39-5	Indeno(1,2,3-cd)pyrene	680	
53-70-3	Dibenz(a,h)anthracene	170	J
191-24-2	Benzo(g,h,i)perylene	650	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01693

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV15C93

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 20 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.13	220	AJ
2.	UNSATURATED OXY HYDROCARBON	4.28	410	J
3.	ALDOL CONDENSATION PRODUCT	4.38	1100	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.47	250	ABJ
5.	UNKNOWN ACID ESTER	4.52	200	J
6.	ALDOL CONDENSATION PRODUCT	4.71	1900	AJ
7.	ALDOL CONDENSATION PRODUCT	4.88	160	AJ
8.	ALDOL CONDENSATION PRODUCT	5.28	1900	AJ
9.	C4 ALKYL BENZENE	5.89	120	J
10.	OXY HETEROCYCLE	6.24	120	J
11. 398-23-2	1,1'-BIPHENYL, 4,4'-DIFLUORO	8.09	97	JN
12. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.30	160	JN
13.	PNA, MW= 192	13.67	120	J
14.	UNKNOWN PNA	14.71	110	J
15. 57-11-4	OCTADECANOIC ACID	15.26	230	JN
16.	PNA, MW= 216	15.80	250	J
17.	UNKNOWN PNA	20.65	480	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01694

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV16C94

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 21 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	420	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01694

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV16C94

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 21 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	20	J
86-74-8	Carbazole	24	J
84-74-2	Di-n-butylphthalate	140	BJ
206-44-0	Fluoranthene	230	J
129-00-0	Pyrene	270	J
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	170	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	190	J
207-08-9	Benzo(k)fluoranthene	77	J
50-32-8	Benzo(a)pyrene	130	J
193-39-5	Indeno(1,2,3-cd)pyrene	180	J
53-70-3	Dibenz(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	180	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01694

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV16C94

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 21 decanted: (Y/N) Y Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.13	91	AJ
2.	UNSATURATED OXY HYDROCARBON	4.28	290	J
3.	ALDOL CONDENSATION PRODUCT	4.37	540	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.52	110	AJ
5.	ALDOL CONDENSATION PRODUCT	4.71	1600	AJ
6.	ALDOL CONDENSATION PRODUCT	4.88	160	AJ
7.	OXY HETEROCYCLE	5.13	190	J
8.	ALDOL CONDENSATION PRODUCT	5.27	1400	AJ
9.	OXY HETEROCYCLE	5.40	110	J
10. 98-86-2	ACETOPHENONE	5.43	100	JN
11.	OXY HETEROCYCLE	6.24	130	J
12.	UNSATURATED ACID	13.66	100	J
13. 57-10-3	HEXADECANOIC ACID	13.82	210	JN

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX07C95

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	32	J
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	45	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	54	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	13	J
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	240	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX07C95

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	190	J
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	360	J
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	2900	
120-12-7	Anthracene	500	
86-74-8	Carbazole	630	
84-74-2	Di-n-butylphthalate	220	BJ
206-44-0	Fluoranthene	3800	E
129-00-0	Pyrene	3000	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	2000	
218-01-9	Chrysene	1800	
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	2300	
207-08-9	Benzo(k)fluoranthene	630	
50-32-8	Benzo(a)pyrene	1300	
193-39-5	Indeno(1,2,3-cd)pyrene	1400	
53-70-3	Dibenz(a,h)anthracene	340	J
191-24-2	Benzo(g,h,i)perylene	1300	

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL37

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX07C95

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.26	490	J
2.	ALDOL CONDENSATION PRODUCT	4.35	360	ABJ
3.	UNKNOWN ACID ESTER	4.50	360	J
4.	ALDOL CONDENSATION PRODUCT	4.69	1500	AJ
5.	ALDOL CONDENSATION PRODUCT	4.87	100	AJ
6.	ALDOL CONDENSATION PRODUCT	5.27	2300	AJ
7.	CYCLIC HYDROCARBON	5.47	120	J
8. 90-12-0	NAPHTHALENE, 1-METHYL-	7.80	89	JN
9. 84-65-1	9,10-ANTHRACENEDIONE	14.27	130	JN
10. 5737-13-3	CYCLOPENTA(DEF)PHENANTHRENON	14.84	88	JN
11.	OXY PNA	15.20	120	J
12. 243-42-5	BENZO[B]NAPHTHO[2,3-D]FURAN	15.50	80	JN
13.	PNA, MW= 216	15.65	83	J
14.	PNA, MW= 216	15.79	180	J
15.	PNA, MW= 216	15.89	94	J
16.	UNKNOWN PNA	15.94	86	J
17.	OXY PNA	16.44	88	J
18. 239-35-0	BENZO[B]NAPHTHO[2,1-D]THIOPH	16.59	150	JN
19.	UNKNOWN PNA	16.63	140	J
20.	OXY PNA, MW = 230	16.72	110	J
21.	OXY POLYAROMATIC CMPD.	16.79	110	J
22.	PNA, MW= 228	17.06	81	J
23.	PNA, MW= 242	17.49	96	J
24.	NITRO AROMATIC COMPOUND	17.70	87	J
25. 192-97-2	BENZO[E]PYRENE	19.09	640	JN
26.	STEROIDAL COMPOUND	19.97	220	J
27.	UNKNOWN PNA	20.63	460	J
28.	UNKNOWN PNA	21.46	350	J
29.	PNA, MW= 278	21.70	190	J
30.	PNA, MW= 278	22.51	370	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37DL

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01695DL

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: OTX05C95

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 12   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL)   Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y   pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	39	DJ
111-44-4	bis(2-Chloroethyl)ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U
95-48-7	2-Methylphenol	750	U
108-60-1	2,2'-oxybis(1-Chloropropane)	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitroso-di-n-propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
111-91-1	bis(2-Chloroethoxy)methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	39	DJ
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-methylphenol	750	U
91-57-6	2-Methylnaphthalene	44	DJ
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	750	U
208-96-8	Acenaphthylene	750	U
606-20-2	2,6-Dinitrotoluene	750	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	220	DJ

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX05C95

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	180	DJ
121-14-2	2,4-Dinitrotoluene	750	U
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl-phenylether	750	U
86-73-7	Fluorene	340	DJ
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	750	U
101-55-3	4-Bromophenyl-phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	2900	D
120-12-7	Anthracene	490	DJ
86-74-8	Carbazole	610	DJ
84-74-2	Di-n-butylphthalate	210	BDJ
206-44-0	Fluoranthene	3600	D
129-00-0	Pyrene	3300	D
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	1600	D
218-01-9	Chrysene	1900	D
117-81-7	bis(2-Ethylhexyl)phthalate	200	DJ
117-84-0	Di-n-octylphthalate	750	U
205-99-2	Benzo(b)fluoranthene	2000	D
207-08-9	Benzo(k)fluoranthene	730	DJ
50-32-8	Benzo(a)pyrene	1300	D
193-39-5	Indeno(1,2,3-cd)pyrene	1200	D
53-70-3	Dibenz(a,h)anthracene	320	DJ
191-24-2	Benzo(g,h,i)perylene	1100	D

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL38

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX06C96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.26	340	J
2.	ALDOL CONDENSATION PRODUCT	4.35	270	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.68	1100	AJ
4.	TRIMETHYL BENZENE	5.04	270	J
5.	ALDOL CONDENSATION PRODUCT	5.25	1600	AJ
6.	C4 ALKYL BENZENE	5.30	720	J
7.	C4 ALKYL BENZENE	5.46	780	J
8.	C4 ALKYL BENZENE	5.55	640	J
9.	C5 ALKYL BENZENE	5.68	290	J
10.	C4 ALKYL BENZENE	5.73	370	J
11.	C4 ALKYL BENZENE	5.86	650	J
12.	C5 ALKYL BENZENE	5.99	230	J
13.	ALKYL INDENE ISOMER	6.17	600	J
14.	DIMETHYL NAPHTHALENE	8.74	300	J
15.	DIMETHYL NAPHTHALENE	8.87	290	J
16. 544-63-8	TETRADECANOIC ACID	11.98	480	JN
17.	ALKYL PHENOL	12.16	310	J
18. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.29	1400	JN
19. 57-10-3	HEXADECANOIC ACID	13.87	4500	JN
20. 2467-03-0	PHENOL, 2-[(4-HYDROXYPHENYL)	14.31	520	JN
21. 506-12-7	HEPTADECANOIC ACID	14.61	240	JN
22. 620-92-8	PHENOL, 4,4'-METHYLENEBIS-	14.80	720	JN
23.	NITRO AROMATIC COMPOUND	15.13	270	J
24.	UNKNOWN PNA	15.17	310	J
25. 57-11-4	OCTADECANOIC ACID	15.32	8000	JN
26.	OXY PNA	15.50	480	J
27.	NITRO AROMATIC COMPOUND	16.49	320	J
28.	NITRO PHENOL COMPOUND	20.20	510	J
29.	STEROIDAL COMPOUND	20.98	1800	J
30.	UNKNOWN PNA	21.45	410	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX06C96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	65	J
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	27	J
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	340	J
120-12-7	Anthracene	68	J
86-74-8	Carbazole	26	J
84-74-2	Di-n-butylphthalate	310	BJ
206-44-0	Fluoranthene	220	J
129-00-0	Pyrene	200	J
85-68-7	Butylbenzylphthalate	24	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	190	J
218-01-9	Chrysene	240	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	200	J
207-08-9	Benzo(k)fluoranthene	59	J
50-32-8	Benzo(a)pyrene	140	J
193-39-5	Indeno(1,2,3-cd)pyrene	120	J
53-70-3	Dibenz(a,h)anthracene	45	J
191-24-2	Benzo(g,h,i)perylene	170	J

675

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL37DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX05C95

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.25	410	J
2.	ALDOL CONDENSATION PRODUCT	4.34	420	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.49	320	AJ
4.	ALDOL CONDENSATION PRODUCT	4.67	1600	AJ
5.	UNKNOWN KETONE	5.09	210	J
6.	ALDOL CONDENSATION PRODUCT	5.23	1900	AJ
7.	OXY PNA, MW= 180	12.11	180	J
8. 132-65-0	DIBENZOTHIOPHENE	12.30	250	JN
9.	PNA, MW= 192	13.59	160	J
10.	PNA, MW= 192	13.64	260	J
11. 84-65-1	9,10-ANTHRACENEDIONE	14.25	420	JN
12.	CYCLOPENTAPHENANTHRENONE	14.82	160	J
13.	OXY PNA	15.18	170	J
14.	PNA, MW= 216	15.79	210	J
15. 239-35-0	BENZO[B]NAPHTHO[2,1-D]THIOPH	16.58	160	JN
16.	PNA, MW= 228	16.61	160	J
17. 192-97-2	BENZO[E]PYRENE	19.05	750	JN
18.	UNKNOWN PNA	20.60	340	J
19.	UNKNOWN PNA	21.43	340	J
20.	PNA, MW= 278	22.45	270	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX06C96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870	
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	54	J
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	28	J
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	12	J
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	460	
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	400	
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	21	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV21C97

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	940	
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	170	J
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	77	J
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	32	J
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	130	J
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	670	
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	490	
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	14	J
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	930	U
83-32-9	Acenaphthene	38	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01697

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTV21C97

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 11   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	930	U
100-02-7	4-Nitrophenol	930	U
132-64-9	Dibenzofuran	150	J
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	93	J
100-01-6	4-Nitroaniline	930	U
534-52-1	4,6-Dinitro-2-methylphenol	930	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	640	
120-12-7	Anthracene	120	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	110	BJ
206-44-0	Fluoranthene	160	J
129-00-0	Pyrene	200	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	4500	E
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	130	J
207-08-9	Benzo(k)fluoranthene	33	J
50-32-8	Benzo(a)pyrene	94	J
193-39-5	Indeno(1,2,3-cd)pyrene	110	J
53-70-3	Dibenz(a,h)anthracene	53	J
191-24-2	Benzo(g,h,i)perylene	140	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL39

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV21C97

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.28	270	J
2.	ALDOL CONDENSATION PRODUCT	4.37	340	ABJ
3. 95-14-7	1H-BENZOTRIAZOLE	4.54	600	JN
4.	ALDOL CONDENSATION PRODUCT	4.70	1300	AJ
5.	TRIMETHYL BENZENE	4.82	360	J
6.	TRIMETHYL BENZENE	5.06	280	J
7.	ALDOL CONDENSATION PRODUCT	5.27	1700	AJ
8.	C4 ALKYL BENZENE	5.32	750	J
9.	C4 ALKYL BENZENE	5.49	920	J
10.	C4 ALKYL BENZENE	5.57	620	J
11.	ALKYL BENZENE	5.70	320	J
12.	C4 ALKYL BENZENE	5.76	420	J
13.	METHYLINDENE ISOMER	6.19	620	J
14. 123-08-0	BENZALDEHYDE, 4-HYDROXY-	8.06	270	JN
15. 92-52-4	BIPHENYL	8.47	390	JN
16.	DIMETHYL NAPHTHALENE	8.77	410	J
17.	DIMETHYL NAPHTHALENE	8.90	340	J
18.	DIMETHYL NAPHTHALENE	9.12	240	J
19. 544-63-8	TETRADECANOIC ACID	12.00	630	JN
20.	ALKYL PHENOL	12.19	870	J
21. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.32	2200	JN
22.	NITRO POLYAROMATIC COMPOUND	12.81	270	J
23.	UNKNOWN PHTHALATE ESTER	13.04	2800	J
24.	PNA, MW= 192	13.61	340	J
25.	PNA, MW= 192	13.68	320	J
26. 57-10-3	HEXADECANOIC ACID	13.88	6900	JN
27. 2467-02-9	PHENOL, 2,2'-METHYLENEBIS-	14.33	610	JN
28.	ALKYL PHENOL	14.68	270	J
29.	STEROIDAL COMPOUND	20.26	700	J
30.	STEROIDAL COMPOUND	21.03	1500	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ________ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX08C97

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	D
111-44-4	bis(2-Chloroethyl)ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	150	DJ
108-60-1	2,2'-oxybis(1-Chloropropane)	740	U
106-44-5	4-Methylphenol	58	DJ
621-64-7	N-Nitroso-di-n-propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
111-91-1	bis(2-Chloroethoxy)methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	600	DJ
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-methylphenol	740	U
91-57-6	2-Methylnaphthalene	420	DJ
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	34	DJ

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX08C97

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	150	DJ
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	95	DJ
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	740	U
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	620	DJ
120-12-7	Anthracene	110	DJ
86-74-8	Carbazole	740	U
84-74-2	Di-n-butylphthalate	100	BDJ
206-44-0	Fluoranthene	180	DJ
129-00-0	Pyrene	240	DJ
85-68-7	Butylbenzylphthalate	740	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)anthracene	160	DJ
218-01-9	Chrysene	260	DJ
117-81-7	bis(2-Ethylhexyl)phthalate	4200	D
117-84-0	Di-n-octylphthalate	740	U
205-99-2	Benzo(b)fluoranthene	170	DJ
207-08-9	Benzo(k)fluoranthene	57	DJ
50-32-8	Benzo(a)pyrene	110	DJ
193-39-5	Indeno(1,2,3-cd)pyrene	110	DJ
53-70-3	Dibenz(a,h)anthracene	41	DJ
191-24-2	Benzo(g,h,i)perylene	190	DJ

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL39DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX08C97

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 11 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 95-14-7	1H-BENZOTRIAZOLE	4.52	650	JN
2.	ALDOL CONDENSATION PRODUCT	4.67	1400	AJ
3.	C3 ALKYL BENZENE	5.04	280	J
4.	ALDOL CONDENSATION PRODUCT	5.24	2000	AJ
5.	C4 ALKYL BENZENE	5.30	450	J
6.	C4 ALKYL BENZENE	5.46	800	J
7.	ALKYL BENZENE	5.68	280	J
8.	C4 ALKYL BENZENE	5.73	370	J
9.	C4 ALKYL BENZENE	5.86	960	J
10.	C5 ALKYL BENZENE	5.99	300	J
11.	C4 ALKYL BENZENE	6.04	310	J
12.	METHYL INDENE ISOMER	6.17	840	J
13. 90-01-7	SALICYL ALCOHOL	7.18	340	JN
14. 92-52-4	BIPHENYL	8.43	300	JN
15.	DIMETHYL NAPHTHALENE	8.74	370	J
16. 544-63-8	TETRADECANOIC ACID	11.97	380	JN
17.	ALKYL PHENOL	12.16	640	J
18. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.29	2100	JN
19. 230-27-3	BENZO[H]QUINOLINE	12.78	240	JN
20.	UNKNOWN PHTHALATE ESTER	13.01	3000	J
21.	PNA, MW= 192	13.59	320	J
22.	PNA, MW= 192	13.66	290	J
23. 57-10-3	HEXADECANOIC ACID	13.84	5600	JN
24. 2467-02-9	PHENOL, 2,2'-METHYLENEBIS-	14.31	600	JN
25.	ALKYL PHENOL	14.65	290	J
26.	DIMETHYL PHENANTHRENE	14.71	220	J
27. 620-92-8	PHENOL, 4,4'-METHYLENEBIS-	14.80	300	JN
28. 57-11-4	OCTADECANOIC ACID	15.30	4400	JN
29.	STEROIDAL COMPOUND	20.23	560	J
30.	STEROIDAL COMPOUND	20.98	1400	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX09C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	620	
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	17	J
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	14	J
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	19	J
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	22	J
91-20-3	Naphthalene	140	J
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	210	J
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	45	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX09C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	62	J
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	41	J
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	500	
120-12-7	Anthracene	83	J
86-74-8	Carbazole	41	J
84-74-2	Di-n-butylphthalate	470	B
206-44-0	Fluoranthene	890	
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	24	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	1500	
218-01-9	Chrysene	1600	
117-81-7	bis(2-Ethylhexyl)phthalate	120	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	3700	E
207-08-9	Benzo(k)fluoranthene	1100	
50-32-8	Benzo(a)pyrene	2100	
193-39-5	Indeno(1,2,3-cd)pyrene	3500	E
53-70-3	Dibenz(a,h)anthracene	1000	
191-24-2	Benzo(g,h,i)perylene	4000	E

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL40

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX09C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.26	220	J
2.	ALDOL CONDENSATION PRODUCT	4.36	580	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.51	190	AJ
4.	ALDOL CONDENSATION PRODUCT	4.68	960	AJ
5.	TRIMETHYL BENZENE	5.04	210	J
6.	ALDOL CONDENSATION PRODUCT	5.26	1600	AJ
7.	C4 ALKYL BENZENE	5.30	280	J
8.	UNKNOWN ACETATE	5.45	530	J
9. 123-08-0	BENZALDEHYDE, 4-HYDROXY-	8.05	240	JN
10.	DIMETHYL NAPHTHALENE	8.88	170	J
11. 544-63-8	TETRADECANOIC ACID	11.98	190	JN
12.	ALKYL PHENOL	12.17	290	J
13. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.29	1100	JN
14.	UNKNOWN PHTHALATE ESTER	13.02	6100	J
15. 2467-02-9	PHENOL, 2,2'-METHYLENEBIS-	14.32	330	JN
16. 620-92-8	PHENOL, 4,4'-METHYLENEBIS-	14.81	420	JN
17. 2440-22-4	DROMETRIZOLE	14.88	300	JN
18.	ALKYL PHENOL + AROMATIC	15.19	280	J
19. 57-11-4	OCTADECANOIC ACID	15.28	2000	JN
20.	UNKNOWN PNA	15.50	270	J
21.	PNA, MW= 216	15.79	220	J
22.	PNA, MW= 242	17.49	190	J
23. 192-97-2	BENZO[E]PYRENE	19.11	3200	JN
24.	PNA, MW= 252	19.38	1100	J
25.	UNKNOWN PNA	20.64	460	J
26.	STEROIDAL COMPOUND	21.04	1400	J
27.	UNKNOWN PNA	21.48	1200	J
28.	UNKNOWN PNA	21.75	970	J
29.	PNA, MW= 278	22.46	480	J
30.	PNA, MW= 278	22.56	1400	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX12C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	800	D
111-44-4	bis(2-Chloroethyl)ether	690	U
95-57-8	2-Chlorophenol	690	U
541-73-1	1,3-Dichlorobenzene	690	U
106-46-7	1,4-Dichlorobenzene	690	U
95-50-1	1,2-Dichlorobenzene	690	U
95-48-7	2-Methylphenol	690	U
108-60-1	2,2'-oxybis(1-Chloropropane)	690	U
106-44-5	4-Methylphenol	690	U
621-64-7	N-Nitroso-di-n-propylamine	690	U
67-72-1	Hexachloroethane	690	U
98-95-3	Nitrobenzene	690	U
78-59-1	Isophorone	690	U
88-75-5	2-Nitrophenol	690	U
105-67-9	2,4-Dimethylphenol	690	U
111-91-1	bis(2-Chloroethoxy)methane	690	U
120-83-2	2,4-Dichlorophenol	690	U
120-82-1	1,2,4-Trichlorobenzene	690	U
91-20-3	Naphthalene	160	DJ
106-47-8	4-Chloroaniline	690	U
87-68-3	Hexachlorobutadiene	690	U
59-50-7	4-Chloro-3-methylphenol	690	U
91-57-6	2-Methylnaphthalene	230	DJ
77-47-4	Hexachlorocyclopentadiene	690	U
88-06-2	2,4,6-Trichlorophenol	690	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	690	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	690	U
208-96-8	Acenaphthylene	690	U
606-20-2	2,6-Dinitrotoluene	690	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	50	DJ

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX12C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.2

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	70	DJ
121-14-2	2,4-Dinitrotoluene	690	U
84-66-2	Diethylphthalate	690	U
7005-72-3	4-Chlorophenyl-phenylether	690	U
86-73-7	Fluorene	35	DJ
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	690	U
101-55-3	4-Bromophenyl-phenylether	690	U
118-74-1	Hexachlorobenzene	690	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	570	DJ
120-12-7	Anthracene	100	DJ
86-74-8	Carbazole	49	DJ
84-74-2	Di-n-butylphthalate	630	BDJ
206-44-0	Fluoranthene	1100	D
129-00-0	Pyrene	1300	D
85-68-7	Butylbenzylphthalate	690	U
91-94-1	3,3'-Dichlorobenzidine	690	U
56-55-3	Benzo(a)anthracene	1500	D
218-01-9	Chrysene	2000	D
117-81-7	bis(2-Ethylhexyl)phthalate	140	DJ
117-84-0	Di-n-octylphthalate	690	U
205-99-2	Benzo(b)fluoranthene	3700	D
207-08-9	Benzo(k)fluoranthene	1300	D
50-32-8	Benzo(a)pyrene	2400	D
193-39-5	Indeno(1,2,3-cd)pyrene	3700	D
53-70-3	Dibenz(a,h)anthracene	1100	D
191-24-2	Benzo(g,h,i)perylene	4400	D

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL40DL

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX12C98

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 30

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNSATURATED OXY HYDROCARBON	4.26	290	J
2.	ALDOL CONDENSATION PRODUCT	4.35	660	ABJ
3.	ALDOL CONDENSATION PRODUCT	4.51	360	AJ
4.	ALDOL CONDENSATION PRODUCT	4.67	1100	AJ
5.	C3 ALKYL BENZENE	5.04	260	J
6.	ALDOL CONDENSATION PRODUCT	5.25	2000	AJ
7.	C4 ALKYL BENZENE	5.30	290	J
8. 112-07-2	2-BUTOXYETHYL ACETATE	5.44	460	JN
9.	C4 ALKYL BENZENE	5.86	340	J
10. 90-12-0	NAPHTHALENE, 1-METHYL-	7.80	190	JN
11. 123-08-0	BENZALDEHYDE, 4-HYDROXY-	8.06	240	JN
12. 544-63-8	TETRADECANOIC ACID	11.97	190	JN
13.	ALKYL PHENOL	12.17	300	J
14. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.29	1400	JN
15.	UNKNOWN PHTHALATE ESTER	13.02	6500	J
16. 57-10-3	HEXADECANOIC ACID	13.83	3200	JN
17. 2467-03-0	PHENOL, 2-[(4-HYDROXYPHENYL)	14.31	430	JN
18. 620-92-8	PHENOL, 4,4'-METHYLENEBIS-	14.80	410	JN
19. 2440-22-4	DROMETRIZOLE	14.88	320	JN
20. 57-11-4	OCTADECANOIC ACID	15.27	3400	JN
21.	POLYAROMATIC COMPOUND	15.50	290	J
22.	PNA, MW= 216	15.79	250	J
23.	PNA, MW= 242	17.49	210	J
24. 192-97-2	BENZO[E]PYRENE	19.10	3200	JN
25.	PNA, MW= 252	19.37	1200	J
26.	NITRO POLYAROMATIC COMPOUND	21.02	1600	J
27.	UNKNOWN PNA	21.47	1300	J
28.	PNA, MW= 276	21.74	1100	J
29.	PNA, MW= 278	22.45	540	J
30.	PNA, MW= 278	22.54	1600	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL41

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTX10C99

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740	
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	62	J
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	29	J
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	18	J
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	520	
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	390	
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL41

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX10C99

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	74	J
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	13	J
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	54	J
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	110	BJ
206-44-0	Fluoranthene	150	J
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	200	J
117-81-7	bis(2-Ethylhexyl)phthalate	140	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	170	J
207-08-9	Benzo(k)fluoranthene	65	J
50-32-8	Benzo(a)pyrene	110	J
193-39-5	Indeno(1,2,3-cd)pyrene	140	J
53-70-3	Dibenz(a,h)anthracene	48	J
191-24-2	Benzo(g,h,i)perylene	220	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL41

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX10C99

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 30

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.36	440	ABJ
2.	METHYL ETHYL BENZENE	4.53	290	J
3.	ALDOL CONDENSATION PRODUCT	4.68	1200	AJ
4.	C3 ALKYL BENZENE	5.04	240	J
5.	ALDOL CONDENSATION PRODUCT	5.25	1500	AJ
6.	C4 ALKYL BENZENE	5.30	650	J
7.	C4 ALKYL BENZENE	5.46	550	J
8.	C4 ALKYL BENZENE	5.55	490	J
9.	ALKYL BENZENE	5.68	280	J
10.	C4 ALKYL BENZENE	5.74	320	J
11.	C4 ALKYL BENZENE	5.88	590	J
12.	C5 ALKYL BENZENE	6.00	220	J
13.	METHYL INDENE	6.17	440	J
14.	DIMETHYL NAPHTHALENE	8.75	300	J
15. 544-63-8	TETRADECANOIC ACID	11.98	410	JN
16. 2057-49-0	PYRIDINE, 4-(3-PHENYLPROPYL)	12.29	1000	JN
17.	UNKNOWN PHTHALATE ESTER	13.01	1600	J
18. 57-10-3	HEXADECANOIC ACID	13.86	4500	JN
19. 2467-02-9	PHENOL, 2,2'-METHYLENEBIS-	14.32	410	JN
20. 506-12-7	HEPTADECANOIC ACID	14.62	210	JN
21. 620-92-8	PHENOL, 4,4'-METHYLENEBIS-	14.80	550	JN
22.	NITRO POLYAROMATIC COMPOUND	15.14	200	J
23.	PHENOL + AROMATIC	15.19	280	J
24. 57-11-4	OCTADECANOIC ACID	15.31	5500	JN
25.	AROMATIC COMPOUND	15.51	220	J
26.	ALKYL PNA	15.75	450	J
27.	NITRO AROMATIC COMPOUND	16.50	340	J
28.	STEROIDAL COMPOUND	20.25	450	J
29.	STEROIDAL COMPOUND	21.03	1100	J
30.	UNKNOWN PNA	21.47	380	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL42

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01700

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTX11C00

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 18 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL42

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01700

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: OTX11C00

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 18   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/30/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	750	
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	33	J
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	140	BJ
206-44-0	Fluoranthene	67	J
129-00-0	Pyrene	66	J
85-68-7	Butylbenzylphthalate	28	J
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	35	J
218-01-9	Chrysene	44	J
117-81-7	bis(2-Ethylhexyl)phthalate	60	J
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	69	J
207-08-9	Benzo(k)fluoranthene	31	J
50-32-8	Benzo(a)pyrene	44	J
193-39-5	Indeno(1,2,3-cd)pyrene	73	J
53-70-3	Dibenz(a,h)anthracene	23	J
191-24-2	Benzo(g,h,i)perylene	69	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FFL42

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: 97C01700

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTX11C00

Level: (low/med) LOW   Date Received: 04/09/97

% Moisture: 18   decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/30/97

Injection Volume: 2.0(uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: 7.1

Number TICs found: 28

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	4.11	97	AJ
2.	UNSATURATED OXY HYDROCARBON	4.26	110	J
3.	ALDOL CONDENSATION PRODUCT	4.36	360	ABJ
4.	ALDOL CONDENSATION PRODUCT	4.69	2000	AJ
5.	ALDOL CONDENSATION PRODUCT	4.82	370	AJ
6.	ALDOL CONDENSATION PRODUCT	4.88	220	AJ
7.	ALDOL CONDENSATION PRODUCT	5.26	1700	AJ
8.	OXY HETEROCYCLE	5.38	130	J
9.	OXY HETEROCYCLE	6.23	230	J
10.	UNSATURATED ACID	13.65	89	J
11. 2091-29-4	9-HEXADECENOIC ACID	13.72	150	JN
12. 57-10-3	HEXADECANOIC ACID	13.81	480	JN
13.	UNKNOWN OXY HYDROCARBON	14.17	100	J
14.	UNSATURATED ACID	15.12	790	J
15. 57-11-4	OCTADECANOIC ACID	15.25	370	JN
16.	UNKNOWN ALCOHOL	16.78	350	J
17.	UNKNOWN ALCOHOL	20.53	1600	J
18.	STEROIDAL COMPOUND	21.04	690	J
19.	STEROIDAL COMPOUND	21.49	320	J
20. 4651-51-8	ERGOST-5-EN-3-OL, (3.BETA.)-	22.24	990	JN
21.	CYCLO POLYAROMATIC CMPD.	22.47	400	J
22.	STEROIDAL COMPOUND	22.57	780	J
23. 83-47-6	.GAMMA.-SITOSTEROL	23.42	1900	JN
24.	CYCLO POLYAROMATIC COMPOUND	23.63	390	J
25.	STEROIDAL COMPOUND	24.06	290	J
26.	STEROIDAL COMPOUND	24.21	280	J
27.	STEROIDAL COMPOUND	25.07	1200	J
28.	STEROIDAL COMPOUND	25.55	810	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: BL-133132-1

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: QTV03BLK

Level: (low/med) LOW   Date Received: ______

% Moisture: ______ decanted: (Y/N) N   Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL)   Date Analyzed: 04/28/97

Injection Volume: 2.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y   pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: BL-133132-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV03BLK

Level: (low/med) LOW Date Received: ______

% Moisture: _____ decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	11	J
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MS

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV19S96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2900	
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	1600	
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	1300	
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	140	J
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	60	J
621-64-7	N-Nitroso-di-n-propylamine	1300	
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	33	J
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	120	J
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	1600	
91-20-3	Naphthalene	1000	
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	2500	
91-57-6	2-Methylnaphthalene	930	
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	19	J
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	1400	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MS

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV19S96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	2000	
132-64-9	Dibenzofuran	130	J
121-14-2	2,4-Dinitrotoluene	1300	
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	62	J
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	2400	
85-01-8	Phenanthrene	790	
120-12-7	Anthracene	150	J
86-74-8	Carbazole	54	J
84-74-2	Di-n-butylphthalate	480	B
206-44-0	Fluoranthene	540	
129-00-0	Pyrene	1400	
85-68-7	Butylbenzylphthalate	31	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	450	
218-01-9	Chrysene	510	
117-81-7	bis(2-Ethylhexyl)phthalate	230	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	400	
207-08-9	Benzo(k)fluoranthene	130	J
50-32-8	Benzo(a)pyrene	300	J
193-39-5	Indeno(1,2,3-cd)pyrene	320	J
53-70-3	Dibenz(a,h)anthracene	100	J
191-24-2	Benzo(g,h,i)perylene	360	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MSD

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QTV20D96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1700	
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	1400	
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	1100	
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	28	J
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	12	J
621-64-7	N-Nitroso-di-n-propylamine	1100	
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	1200	
91-20-3	Naphthalene	200	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	1900	
91-57-6	2-Methylnaphthalene	160	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	1300	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MSD

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: OTV20D96

Level: (low/med) LOW Date Received: 04/09/97

% Moisture: 10 decanted: (Y/N) N Date Extracted: 04/18/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	1900	
132-64-9	Dibenzofuran	31	J
121-14-2	2,4-Dinitrotoluene	1300	
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	16	J
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1200	
85-01-8	Phenanthrene	210	J
120-12-7	Anthracene	34	J
86-74-8	Carbazole	49	J
84-74-2	Di-n-butylphthalate	180	BJ
206-44-0	Fluoranthene	130	J
129-00-0	Pyrene	1700	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	100	J
218-01-9	Chrysene	140	J
117-81-7	bis(2-Ethylhexyl)phthalate	74	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	110	J
207-08-9	Benzo(k)fluoranthene	38	J
50-32-8	Benzo(a)pyrene	89	J
193-39-5	Indeno(1,2,3-cd)pyrene	95	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	100	J

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL28

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01686

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 21 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	2.6	JP
72-55-9	4,4'-DDE	1.2	JP
72-20-8	Endrin	2.6	JP
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	0.74	JP
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	1.9	JP
72-43-5	Methoxychlor	7.3	J
53494-70-5	Endrin ketone	4.2	U
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	2.0	JP
5103-74-2	gamma-Chlordane	2.3	
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	✓ 56	

1269

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL29

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01687

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 30 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	0.57	JP
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.0	JP
72-55-9	4,4'-DDE	2.8	JP
72-20-8	Endrin	6.3	P
33213-65-9	Endosulfan II	4.7	U
72-54-8	4,4'-DDD	2.3	JP
1031-07-8	Endosulfan sulfate	2.1	JP
50-29-3	4,4'-DDT	✓ 5.9	P
72-43-5	Methoxychlor	20	JP
53494-70-5	Endrin ketone	2.7	JP
7421-93-4	Endrin aldehyde	4.7	U
5103-71-9	alpha-Chlordane	2.1	JP
5103-74-2	gamma-Chlordane	2.7	
8001-35-2	Toxaphene	240	U
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	47	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL30

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01688

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 24 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	0.45	J
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	0.19	JP
5103-74-2	gamma-Chlordane	0.17	JP
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL31

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01689

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 24 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.3	U
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	0.32	JP
5103-74-2	gamma-Chlordane	0.37	JP
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

1296

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL32

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01690

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 31 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC (Lindane)	2.5	U
76-44-8	Heptachlor	2.5	U
309-00-2	Aldrin	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
959-98-8	Endosulfan I	2.5	U
60-57-1	Dieldrin	0.90	JP
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	0.67	JP
72-43-5	Methoxychlor	25	U
53494-70-5	Endrin ketone	4.8	U
7421-93-4	Endrin aldehyde	4.8	U
5103-71-9	alpha-Chlordane	0.24	JP
5103-74-2	gamma-Chlordane	2.5	U
8001-35-2	Toxaphene	250	U
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	97	U
11141-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL33

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01691

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 22 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	1.3	J
72-55-9	4,4'-DDE	0.51	JP
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	0.39	JP
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.2	U
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	✓1.3	JP
5103-74-2	gamma-Chlordane	0.86	JP
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL34

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01692

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 20 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	1.1	JP
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	3.1	P
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	24	P
72-55-9	4,4'-DDE	23	P
72-20-8	Endrin	17	P
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.9	P
1031-07-8	Endosulfan sulfate	2.4	JP
50-29-3	4,4'-DDT	19	P
72-43-5	Methoxychlor	130	P
53494-70-5	Endrin ketone	12	P
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	✓ 9.4	P
5103-74-2	gamma-Chlordane	✓ 9.1	
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	340	

1323

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL35

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01693

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 20 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	1.1	JP
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	1.5	JP
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	9.0	P
72-55-9	4,4'-DDE	6.4	P
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.1	U
1031-07-8	Endosulfan sulfate	4.2	P
50-29-3	4,4'-DDT	7.3	P
72-43-5	Methoxychlor	✓53	P
53494-70-5	Endrin ketone	8.1	P
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	7.2	P
5103-74-2	gamma-Chlordane	8.0	
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL36

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01694

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 22 decanted: (Y/N) Y Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	0.23	JP
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.20	JP
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	0.69	JP
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	2.8	JP
72-55-9	4,4'-DDE	2.5	JP
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.9	P
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	4.4	P
72-43-5	Methoxychlor	9.9	J
53494-70-5	Endrin ketone	2.4	JP
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	2.1	JP
5103-74-2	gamma-Chlordane	3.1	
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL37

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01695

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 12 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.5	J
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	3.1	P
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	13	P
72-55-9	4,4'-DDE	4.1	P
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	2.0	JP
1031-07-8	Endosulfan sulfate	1.9	JP
50-29-3	4,4'-DDT	5.5	P
72-43-5	Methoxychlor	20	P
53494-70-5	Endrin ketone	3.7	J
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	7.4	P
5103-74-2	gamma-Chlordane	9.2	
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 10 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.3	JP
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	1.6	JP
72-55-9	4,4'-DDE	3.6	JP
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	2.1	JP
1031-07-8	Endosulfan sulfate	5.0	P
50-29-3	4,4'-DDT	✓ 7.9	
72-43-5	Methoxychlor	37	P
53494-70-5	Endrin ketone	7.7	P
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL39

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01697

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 11 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.2	JP
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	0.44	JP
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	0.81	JP
72-55-9	4,4'-DDE	3.7	U
72-20-8	Endrin	3.1	JP
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	1.5	JP
1031-07-8	Endosulfan sulfate	3.2	JP
50-29-3	4,4'-DDT	5.3	
72-43-5	Methoxychlor	29	
53494-70-5	Endrin ketone	1.1	JP
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	0.55	JP
5103-74-2	gamma-Chlordane	1.8	JP
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	75	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL40

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01698

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 5 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	0.73	JP
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	2.0	JP
72-55-9	4,4'-DDE	1.0	JP
72-20-8	Endrin	2.3	JP
33213-65-9	Endosulfan II	3.5 ✓	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	5.2	
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	25	P
53494-70-5	Endrin ketone	4.8	P
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	✓ 73	P

1380

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL41

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01699

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 9 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	3.2	P
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	0.59	JP
72-55-9	4,4'-DDE	3.6	U
72-20-8	Endrin	2.9	JP
33213-65-9	Endosulfan II	3.6	U
72-54-8	4,4'-DDD	2.2	JP
1031-07-8	Endosulfan sulfate	6.7	
50-29-3	4,4'-DDT	5.5	P
72-43-5	Methoxychlor	13	JP
53494-70-5	Endrin ketone	3.4	JP
7421-93-4	Endrin aldehyde	3.6	U
5103-71-9	alpha-Chlordane	1.1	JP
5103-74-2	gamma-Chlordane	2.4	
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL42

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01700

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 18 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	4.0	U
72-20-8	Endrin	0.86	JP
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	4.0	U
50-29-3	4,4'-DDT	4.0	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

1400

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKS2

Lab Name: DATACHEM LABS   Contract: 68D50017

Lab Code: DATAC   Case No.: 25393   SAS No.: ______   SDG No.: FFL28

Matrix: (soil/water) SOIL   Lab Sample ID: PBLKS2_0103

Sample wt/vol: 30.0 (g/mL) G   Lab File ID: ______

% Moisture: ______ decanted: (Y/N) ___   Date Received: ______

Extraction: (SepF/Cont/Sonc) SONC   Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL)   Date Analyzed: 04/29/97

Injection Volume: 2.00 (uL)   Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y   pH: 5.0   Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

1600

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MS

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MS

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 10 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	13	P
76-44-8	Heptachlor	✓15	P
309-00-2	Aldrin	14	
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	28	
72-55-9	4,4'-DDE	1.2	JP
72-20-8	Endrin	34	
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	2.2	JP
1031-07-8	Endosulfan sulfate	4.2	
50-29-3	4,4'-DDT	37	
72-43-5	Methoxychlor	9.1	JP
53494-70-5	Endrin ketone	4.2	P
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	0.86	JP
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1648

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FFL38MSD

Lab Name: DATACHEM LABS Contract: 68D50017

Lab Code: DATAC Case No.: 25393 SAS No.: ______ SDG No.: FFL28

Matrix: (soil/water) SOIL Lab Sample ID: 97C01696MSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: ______

% Moisture: 10 decanted: (Y/N) N Date Received: 04/09/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/11/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/30/97

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	14	P
76-44-8	Heptachlor	16	
309-00-2	Aldrin	16	
1024-57-3	Heptachlor epoxide	0.43	JP
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	30	
72-55-9	4,4'-DDE	1.5	JP
72-20-8	Endrin	39	
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	3.9	P
1031-07-8	Endosulfan sulfate	4.0	P
50-29-3	4,4'-DDT	41	
72-43-5	Methoxychlor	12	JP
53494-70-5	Endrin ketone	6.7	
7421-93-4	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	1.4	JP
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

2

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25319

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	2/19/97	Airborne

Regional Information:

Non-Superfund Program:

Sampler (Name): Debra Hendricks

Sampler Signature: Debra Hendricks

Airbill Number: 606 335 2831

Site Name: W. Silver Inc.

City, State: Anthony TX

Site Spill ID:

3. Purpose*
- Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED
- Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI
- Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

5. Ship To: CEIMIC, 10 Dean Knauss Dr. Narragansett RI 02882
ATTN: Miguel Muzzio 401/782-8900

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
FEZ22	4	Low	Grab	5	X	X	X		6-011114-6	R1	2/19/97 16:30	MF4RØ2	DH	R
FEZ23	4	Low	Grab	5	X	X	X		6-011119-21	R2	2/19/97 16:05	MF4RØ3	DH	B

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
YES	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Debra Hendricks	02/19/97 18:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-15 REV.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 4-10-1997

Subject: Contract Laboratory Program Data Review

From: Melvin L. Ritter, ESAT RPO, 6MD-HC M Ritter 4/10/97

To: B. Canellas , 6SF-RA

Site: W.SILVER

Case#: 25319

SDG#: FE-Z22

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

(X) Acceptable: No major problems with data package.

( ) Provisional: Use of data requires caution. Data is acceptable for Regional use. Problems are noted in the review report.

( ) Unacceptable: Some or all of data should not be used. Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator
Files (2)

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TX 77074

MEMORANDUM

DATE: April 8, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C.H. Chiang, ESAT Team Manager, Region VI

Tom C.H. Chiang

SUBJECT: CLP Data Review

REF: TDF # 6-7335A ESAT # O-1806
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25319
SDG # FEZ22
Site W. Silver

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

The data package was contractually compliant as determined by the hardcopy data review. The reviewer was unable to confirm some defects reported by the CCS audit.

II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

The total number of results reviewed was 250 for this data package. The data package is technically acceptable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	25319	SITE	W. Silver
LABORATORY	CEIMIC	NO. OF SAMPLES	2
CONTRACT#	68-D5-0019	MATRIX	Water
SDG#	FEZ22	REVIEWER (IF NOT ESD)	ESAT
SOW#	RAS SOW OLM03.2	REVIEWER'S NAME	Gene Zhu
ACCT#	7FAXJN44 SF# FAXUZZ	COMPLETION DATE	April 8, 1997

SAMPLE NO. FE-Z22
FE-Z23

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	O	O	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A
9. COMPOUND ID/QUANTITATION	O	O	O
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	O	O	O

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS: None.

AREA OF CONCERN: The laboratory reported high concentrations (up to 210 μg/L) of acetone and bis(2-ethylhexyl)phthalate in the rinsate. A high level of unknown VOA TIC was also reported in the rinsate.

NOTABLE PERFORMANCE: None.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 25319 **SDG** FEZ22 **SITE** W. Silver **LAB** CEIMIC

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	2		
BNA	2		
PEST	2		

COMMENTS: The case consisted of one rinsate and one field blank for complete RAS organics analysis. The OTR/COC Record designated sample FE-Z22 as a rinsate and FE-Z23 as a field blank. No MS/MSD analyses were required. The data package arrived on time for the 35-day contractual turnaround time.

The laboratory diluted the VOA and BNA rinsates because of high concentrations (up to 210 $\mu g/L$) of acetone and bis(2-ethylhexyl)-phthalate. No other target analytes were detected in the rinsate or the field blank sample. The laboratory also reported a high concentration of an unknown TIC for the VOA rinsate.

All data are acceptable. The technical usability of all reported sample results is indicated by ESAT's final data qualifiers in the attached Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. All samples met the contractual and technical (40 CFR Part 136) holding time criteria.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met GC/MS tuning criteria. All Pest/PCB analyses met instrument performance guidelines.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25319 **SDG** FEZ22 **SITE** W. Silver **LAB** CEIMIC

3. **Calibrations:** Acceptable. TCL compounds met contractual calibration criteria. Several VOA and BNA analytes failed technical %RSD and/or %D calibration criteria, but sample results were not affected. The poor chromatographic performance for 4-chloroaniline in one BNA daily calibration signaled the need for manual search of this analyte in the only associated sample analysis - the BNA method blank. A false negative may exist for the 4-chloroaniline result in this blank because it is unclear if the laboratory conducted the needed manual search. Since this analyte was not detected in the field samples associated with this method blank, the potential false negative blank result has no effect on data usability.

4. **Blanks:** Acceptable. All method, storage, and instrument blanks met contractual QC guidelines. The BNA method blank had 3,3'-dichlorobenzidine below the CRQL, but sample results were not affected. The laboratory reported methylene chloride below CRQL in the storage blank. The reviewer recommends that the methylene chloride results in the VOA samples be considered as undetected (U) for possible laboratory contamination.

5. **System Monitoring Compounds (SMC's)/Surrogates:** Acceptable. DCB recoveries were below the advisory QC limit for sample FE-Z22 on both columns (26% and 27%). Since these recoveries were within the expanded Region 6 QC limits, no data were qualified. SMC and other surrogate recoveries met QC criteria.

6. **Matrix Spike/Matrix Spike Duplicate:** Not applicable. MS/MSD analyses are not required for field QC samples.

7. **Other QC:** Not applicable.

8. **Internal Standards (IS):** Acceptable. The IS performance is acceptable for the VOA and BNA samples.

9. **Compound Identity/Quantitation:** Acceptable. Rinsate sample FE-Z22 contained high concentrations of acetone (210 µg/L) and bis(2-ethylhexyl)phthalate (100 µg/L). No other target analytes were reported above CRQL's. All sample results met compound identification criteria.

10. **Performance/Completeness:** Acceptable. The data package was complete. The laboratory was contacted for the necessary resubmission (see attached Fax Record Log).

11. **Overall Assessment:** Data are acceptable for all samples.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U	Not detected at reported quantitation limit.
N	Identification is tentative.
J	Estimated value.
R	Unusable.
^	High biased. Actual concentration may be lower than the concentration reported.
v	Low biased. Actual concentration may be higher than the concentration reported.
F+	A false positive exists.
F-	A false negative exists.
B	This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.
UJ	Estimated quantitation limit.
T	Identification is questionable because of absence of other commonly coexisting pesticides.
*	Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25319 | SDG: FEZ22 | Reviewer: Gene Zhu

Laboratory: CEIMIC | Matrix: Water | Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Z22	FE-Z23					
Chloromethane	100 U	10 U					
Bromomethane	15 J	10 U					
Vinyl chloride	100 U	10 U					
Chloroethane	100 U	10 U					
Methylene chloride	100 U	10 U					
Acetone	210	5 J					
Carbon disulfide	100 U	10 U					
1,1-Dichloroethene	100 U	10 U					
1,1-Dichloroethane	100 U	10 U					
1,2-Dichloroethene (total)	100 U	10 U					
Chloroform	100 U	10 U					
1,2-Dichloroethane	100 U	10 U					
2-Butanone	100 U	10 U					
1,1,1-Trichloroethane	100 U	10 U					
Carbon tetrachloride	100 U	10 U					
Bromodichloromethane	100 U	10 U					
1,2-Dichloropropane	100 U	10 U					
cis-1,3-Dichloropropene	100 U	10 U					
Trichloroethene	100 U	10 U					
Dibromochloromethane	100 U	10 U					
1,1,2-Trichloroethane	100 U	10 U					
Benzene	100 U	10 U					
trans-1,3-Dichloropropene	100 U	10 U					
Bromoform	100 U	10 U					
4-Methyl-2-pentanone	100 U	10 U					
2-Hexanone	100 U	10 U					
Tetrachloroethene	100 U	10 U					
1,1,2,2-Tetrachloroethane	100 U	10 U					
Toluene	100 U	10 U					
Chlorobenzene	100 U	10 U					
Ethylbenzene	100 U	10 U					
Styrene	100 U	10 U					
Xylenes (total)	100 U	10 U					
Sample Volume (mL):	5	5					
Dilution Factor:	10	1					
Number of TIC's:	1	0					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25319 SDG: FEZ22 Reviewer: Gene Zhu

Laboratory: CEIMIC Matrix: Water Units: ug/L

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FE-Z22		FE-Z23											
Phenol	20	U	10	U										
bis(2-Chloroethyl)ether	20	U	10	U										
2-Chlorophenol	20	U	10	U										
1,3-Dichlorobenzene	20	U	10	U										
1,4-Dichlorobenzene	20	U	10	U										
1,2-Dichlorobenzene	20	U	10	U										
2-Methylphenol	20	U	10	U										
2,2'-Oxybis(1-chloropropane)	20	U	10	U										
4-Methylphenol	20	U	10	U										
N-Nitroso-di-n-propylamine	20	U	10	U										
Hexachloroethane	20	U	10	U										
Nitrobenzene	20	U	10	U										
Isophorone	20	U	10	U										
2-Nitrophenol	20	U	10	U										
2,4-Dimethylphenol	20	U	10	U										
bis(2-Chloroethoxy)methane	20	U	10	U										
2,4-Dichlorophenol	20	U	10	U										
1,2,4-Trichlorobenzene	20	U	10	U										
Naphthalene	20	U	10	U										
4-Chloroaniline	20	U	10	U										
Hexachlorobutadiene	20	U	10	U										
4-Chloro-3-methylphenol	20	U	10	U										
2-Methylnaphthalene	20	U	10	U										
Hexachlorocyclopentadiene	20	U	10	U										
2,4,6-Trichlorophenol	20	U	10	U										
2,4,5-Trichlorophenol	50	U	25	U										
2-Chloronaphthalene	20	U	10	U										
2-Nitroaniline	50	U	25	U										
Dimethylphthalate	20	U	10	U										
Acenaphthylene	20	U	10	U										
2,6-Dinitrotoluene	20	U	10	U										
3-Nitroaniline	50	U	25	U										
Acenaphthene	20	U	10	U										
2,4-Dinitrophenol	50	U	25	U										
4-Nitrophenol	50	U	25	U										
Dibenzofuran	20	U	10	U										
2,4-Dinitrotoluene	20	U	10	U										
Diethylphthalate	20	U	10	U										
4-Chlorophenyl-phenylether	20	U	10	U										
Fluorene	20	U	10	U										
4-Nitroaniline	50	U	25	U										
4,6-Dinitro-2-methylphenol	50	U	25	U										
N-Nitrosodiphenylamine	20	U	10	U										
4-Bromophenyl-phenylether	20	U	10	U										
Hexachlorobenzene	20	U	10	U										
Pentachlorophenol	50	U	25	U										
Phenanthrene	20	U	10	U										
Anthracene	20	U	10	U										

ORGANIC DATA SUMMARY

Case No.: 25319 SDG: FEZ22 Reviewer: Gene Zhu

Laboratory: CEIMIC Matrix: Water Units: ug/L

SEMIVOLATILES		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG		FLAG
EPA SAMPLE NUMBER:	FE-Z22		FE-Z23											
Carbazole	20	U	10	U										
Di-n-butylphthalate	20	U	2	J										
Fluoranthene	20	U	10	U										
Pyrene	20	U	10	U										
Butylbenzylphthalate	20	U	10	U										
3,3'-Dichlorobenzidine	20	U	10	U										
Benzo(a)anthracene	20	U	10	U										
Chrysene	20	U	10	U										
bis(2-Ethylhexyl)phthalate	100		10	U										
Di-n-octylphthalate	20	U	10	U										
Benzo(b)fluoranthene	20	U	10	U										
Benzo(k)fluoranthene	20	U	10	U										
Benzo(a)pyrene	20	U	10	U										
Indeno(1,2,3-cd)pyrene	20	U	10	U										
Dibenz(a,h)anthracene	20	U	10	U										
Benzo(g,h,i)perylene	20	U	10	U										
Sample Volume (mL):	1000		1000											
Dilution Factor:	2		1											
Number of TIC's:	6		11											

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25319 SDG: FEZ22 Reviewer: Gene Zhu

Laboratory: CEIMIC Matrix: Water Units: ug/L

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Z22	FE-Z23					
alpha-BHC	0.05 U	0.05 U					
beta-BHC	0.05 U	0.05 U					
delta-BHC	0.05 U	0.05 U					
gamma-BHC (lindane)	0.05 U	0.05 U					
Heptachlor	0.05 U	0.05 U					
Aldrin	0.05 U	0.05 U					
Heptachlor epoxide	0.05 U	0.05 U					
Endosulfan I	0.05 U	0.05 U					
Dieldrin	0.1 U	0.1 U					
4,4'-DDE	0.1 U	0.1 U					
Endrin	0.1 U	0.1 U					
Endosulfan II	0.1 U	0.1 U					
4,4'-DDD	0.1 U	0.1 U					
Endosulfan sulfate	0.1 U	0.1 U					
4,4'-DDT	0.1 U	0.1 U					
Methoxychlor	0.5 U	0.5 U					
Endrin ketone	0.1 U	0.1 U					
Endrin aldehyde	0.1 U	0.1 U					
alpha-Chlordane	0.05 U	0.05 U					
gamma-Chlordane	0.05 U	0.05 U					
Toxaphene	5 U	5 U					
Aroclor-1016	1 U	1 U					
Aroclor-1221	2 U	2 U					
Aroclor-1232	1 U	1 U					
Aroclor-1242	1 U	1 U					
Aroclor-1248	1 U	1 U					
Aroclor-1254	1 U	1 U					
Aroclor-1260	1 U	1 U					
Sample Volume (mL):	1000	1000					
Dilution Factor:	1	1					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25319 SDG No. FEZ22 SDG Nos. To Follow SAS No. Date Rec 3/28/97

EPA Lab ID: CEIMIC
Lab Location: 10 Dean Knauss Dr. Narragansett, RI 02882
Region: 6 Audit No.: 25319/FEZ22
Re-Submitted CSF? Yes ____ No X
Box No(s): 1
COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

	Signature	Printed Name/Title	Date
Audited by:	[signature]	Gene Zhu / ESAT Data Reviewer	4/03/1997
Audited by:			
Audited by:			

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ____ Date Entered: ____ Date Reviewed: ____

Entered by: ____ ____

Reviewed by: ____ ____

Signature Printed Name/Title

LOCKHEED MARTIN SERVICES GROUP
ESAT Region 6

10101 Southwest Freeway, Suit 500, Houston, TX 77074 Tel:(713)988-2977

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Miguel Muzzio

Firm CEIMIC

Address 10 Dean Knauss Dr.

City Narragansett State RI 02882

Telephone 401-782-8900 Ext.

Fax Telephone No. 401-782-8905 Ext.

Sender:

Name Gene Zhu

Date April 8, 1997

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear, please call: (713) 988-2977

MESSAGES: Resubmission request for Case 25319 SDG: FEZ22 (O-1806)

Fax Model No. Brother IntelliFAX 3500ML Fax No. (713) 988-2994

In Reference to Case No(s):
25319 SDG: FEZ22 (O-1806)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: April 8, 1997
Laboratory Name: CEIMIC
Lab Contact: Miguel Muzzio

Region: 6
Regional Contact: Gene Zhu - ESAT (LMSG)

FAX initiated by: ______Laboratory ___X___Region

In reference to data for the following fractions:

BNA

Summary of Questions/Issues:

Form 5B, page 138: The %Relative Abundance was incorrect for m/e 441. Please revise and resubmit this form.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-29), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items within 7 days to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2977.

Signature April 8, 1997
Date

Distribution: (1) Lab Copy and (2) Region Copy

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ22

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

atrix: (soil/water) WATER Lab Sample ID: 970131-01

ample wt/vol: 5.0 (g/mL) ML Lab File ID: FU008

evel: (low/med) LOW Date Received: 02/21/97

Moisture: not dec. ____ Date Analyzed: 02/25/97

C Column: HP624 ID: 0.530 (mm) Dilution Factor: 10.0

oil Extract Volume: ________ (uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	15	J
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	19	J
67-64-1	Acetone	210	
75-15-0	Carbon Disulfide	100	U
75-35-4	1,1-Dichloroethene	100	U
75-34-3	1,1-Dichloroethane	100	U
540-59-0	1,2-Dichloroethene (total)	100	U
67-66-3	Chloroform	100	U
107-06-2	1,2-Dichloroethane	100	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	100	U
56-23-5	Carbon Tetrachloride	100	U
75-27-4	Bromodichloromethane	100	U
78-87-5	1,2-Dichloropropane	100	U
10061-01-5	cis-1,3-Dichloropropene	100	U
79-01-6	Trichloroethene	100	U
124-48-1	Dibromochloromethane	100	U
79-00-5	1,1,2-Trichloroethane	100	U
71-43-2	Benzene	100	U
10061-02-6	trans-1,3-Dichloropropene	100	U
75-25-2	Bromoform	100	U
108-10-1	4-Methyl-2-Pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	100	U
79-34-5	1,1,2,2-Tetrachloroethane	100	U
108-88-3	Toluene	100	U
108-90-7	Chlorobenzene	100	U
100-41-4	Ethylbenzene	100	U
100-42-5	Styrene	100	U
1330-20-7	Xylene (total)	100	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ23

Lab Name: CEIMIC CORP   Contract: 68-D5-0019

Lab Code: CEIMIC   Case No.: 25319   SAS No.: ______   SDG No.: FEZ22

Matrix: (soil/water) WATER   Lab Sample ID: 970131-02

Sample wt/vol: 5.0 (g/mL) ML   Lab File ID: FU007

Level: (low/med) LOW   Date Received: 02/21/97

% Moisture: not dec. ____   Date Analyzed: 02/25/97

GC Column: HP624   ID: 0.530 (mm)   Dilution Factor: 1.0

Soil Extract Volume: ________ (uL)   Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ22

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

atrix: (soil/water) WATER Lab Sample ID: 970131-01

ample wt/vol: 1000 (g/mL) ML Lab File ID: DO127

evel: (low/med) LOW Date Received: 02/21/97

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 03/03/97

njection Volume: 2.0 (uL) Dilution Factor: 2.0

PC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	20	U
111-44-4	bis(2-Chloroethyl)Ether	20	U
95-57-8	2-Chlorophenol	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
108-60-1	2,2'-oxybis(1-Chloropropane)	20	U
106-44-5	4-Methylphenol	20	U
621-64-7	N-Nitroso-Di-n-Propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	20	U
111-91-1	bis(2-Chloroethoxy)Methane	20	U
120-83-2	2,4-Dichlorophenol	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
91-20-3	Naphthalene	20	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	20	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	20	U
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	20	U

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ22

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

atrix: (soil/water) WATER Lab Sample ID: 970131-01

ample wt/vol: 1000 (g/mL) ML Lab File ID: D0127

evel: (low/med) LOW Date Received: 02/21/97

Moisture: ______ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 03/03/97

njection Volume: 2.0 (uL) Dilution Factor: 2.0

PC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	20	U
121-14-2	2,4-Dinitrotoluene	20	U
84-66-2	Diethylphthalate	20	U
7005-72-3	4-Chlorophenyl-phenylether	20	U
86-73-7	Fluorene	20	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
84-74-2	Di-n-Butylphthalate	20	U
206-44-0	Fluoranthene	20	U
86-74-8	Carbazole	20	U
129-00-0	Pyrene	20	U
85-68-7	Butylbenzylphthalate	20	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	20	U
218-01-9	Chrysene	20	U
117-81-7	bis-(2-Ethylhexyl)Phthalate	100	
117-84-0	Di-n-Octyl Phthalate	20	U
205-99-2	Benzo(b)Fluoranthene	20	U
207-08-9	Benzo(k)Fluoranthene	20	U
50-32-8	Benzo(a)Pyrene	20	U
193-39-5	Indeno(1,2,3-cd)Pyrene	20	U
53-70-3	Dibenz(a,h)Anthracene	20	U
191-24-2	Benzo(g,h,i)Perylene	20	U

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(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ22

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

trix: (soil/water) WATER Lab Sample ID: 970131-01

ample wt/vol: 1000 (g/mL) ML Lab File ID: DO127

evel: (low/med) LOW Date Received: 02/21/97

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 03/03/97

njection Volume: 2.0 (uL) Dilution Factor: 2.0

PC Cleanup: (Y/N) N pH: ____

umber TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 103231	Hexanedioic acid, bis(2-ethy	20.26	15	JN
2. 65850	Benzoic acid	11.17	8	JN
3.	Unknown	13.65	7	J
4.	Unknown alcohol	14.91	8	J
5.	Unknown	16.12	25	J
6. 80057	Phenol, 4,4'-(1-methylethyli	19.58	5	JN

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ23

b Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

trix: (soil/water) WATER Lab Sample ID: 970131-02

mple wt/vol: 1000 (g/mL) ML Lab File ID: DO083

vel: (low/med) LOW Date Received: 02/21/97

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

jection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) N pH: ____

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ23

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

atrix: (soil/water) WATER Lab Sample ID: 970131-02

ample wt/vol: 1000 (g/mL) ML Lab File ID: DO083

evel: (low/med) LOW Date Received: 02/21/97

Moisture: ______ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

njection Volume: 2.0 (uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) N pH: ____

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	2	J
206-44-0	Fluoranthene	10	U
86-74-8	Carbazole	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis-(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

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(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ23

ab Name: CEIMIC CORP Contract: 68-D5-0019

ab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

atrix: (soil/water) WATER Lab Sample ID: 970131-02

ample wt/vol: 1000 (g/mL) ML Lab File ID: DO083

evel: (low/med) LOW Date Received: 02/21/97

Moisture: _____ decanted: (Y/N) ___ Date Extracted: 02/25/97

oncentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) N pH: ____

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	8.31	3	J
2.	Unknown	8.48	2	J
3. 104767	1-Hexanol, 2-ethyl-	8.75	4	JN
4. 98862	Acetophenone	9.40	2	JN
5. 112345	Ethanol, 2-(2-butoxyethoxy)-	10.98	2	JN
6.	Unknown	13.07	13	J
7. 121335	Vanillin	13.61	5	JN
8.	Unknown	17.88	4	J
9.	Unknown	19.82	2	J
10.	Unknown	20.59	2	J
11.	Unknown	21.49	2	J

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ22

Lab Name: CEIMIC CORP Contract: 68-D5-0019

Lab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

Matrix: (soil/water) WATER Lab Sample ID: 970131-01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: ______

% Moisture: ______ decanted: (Y/N) ___ Date Received: 02/21/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/24/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/08/97

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ23

Lab Name: CEIMIC CORP Contract: 68-D5-0019

Lab Code: CEIMIC Case No.: 25319 SAS No.: ______ SDG No.: FEZ22

Matrix: (soil/water) WATER Lab Sample ID: 970131-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: ______

% Moisture: ______ decanted: (Y/N) ___ Date Received: 02/21/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/24/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/08/97

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No. 25319

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TNRCC	2/19/97	Airborne

Regional Information:

Sampler (Name): Debra Hendricks

Airbill Number: 6063352934

Non-Superfund Program:

Sampler Signature: Debra Hendricks

5. Ship To: SENTIN 2800 Bob Wallace Ave Suite L3 Huntsville AL 35805 ATTN: Melvin Kilmore

Site Name: W. Silver Inc.

City, State: Anthony TX

Site Spill ID:

3. Purpose*: Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action: [ ] CLEM, [ ] PA, [ ] REM, [ ] RI, [X] SI, [ ] ESI; Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO_3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. – = Not a QC Sample)
MFGRØ2	4	Low	Grab	2,3		X	X					6-011117-8	R1	2/19/97 1630	FEZ22	DH	R
MFGRØ3	4	Low	Grab	2,3		X	X					6-011122-23	R2	2/19/97 1605	FEZ23	DH	B

Shipment for Case Complete? (Y/N): YES

Page 1 of 1

Sample(s) to be Used for Laboratory QC:

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Debra Hendricks	02/19/97 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-13 REV.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 3-11-1997

Subject: **Contract Laboratory Program Data Review**

From: Melvin L. Ritter, ESAT RPO, 6MD-HC M. Humphrey for 3/11/97

To: B. Canellas , 6SF-RA

Site: W. SILVER

Case#: 25319

SDG#: MFG-R02

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site.

The samples analyzed and reviewed are detailed in the attached Regional data assessment report for this case.

The data package was found to be:

( ) Acceptable. No problems with data package.

(X) Provisional; use of data requires caution. Problems are noted in Review Summary. Data is acceptable for Regional use.

( ) Unacceptable; Some or all of data should not be used. Problems are noted in the Review Summary.

Questions regarding the data review can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. ElFeky, Region 6 Data Coordinator

Files (2)

LOCKHEED MARTIN SERVICES GROUP
ONE STERLING PLAZA
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: March 7, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom C.H. Chiang, ESAT ETM, Region VI

Tom C H Chiang

SUBJECT: CLP Data Review

REF: TDF # 6-7257A, ESAT File # I-2093
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 25319
SDG # MFGR02
Site W SILVER

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

Regional and CCS reviews found the package contractually compliant.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 48 results were reviewed for this data package. The package is technically provisional because of the following problem.

The ICP coefficient of variation was greater than 20 percent for one lead result.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	25319	SITE	W SILVER
LABORATORY	SENTIN	NO. OF SAMPLES	2
CONTRACT#	68-D5-0167	MATRIX	water
SDG#	MFGR02	REVIEWER (IF NOT ESD)	ESAT
SOW#	RAS ILM04.0	REVIEWER'S NAMES	Mike Fertitta
ACCT# 7FAXJN44	SF# FAXUZZ	COMPLETION DATE	March 7, 1997

SAMPLE NO.'s: MFG-R02
MFG-R03

DATA ASSESSMENT SUMMARY

	ICP	HG	CN
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	O	O	O
3. BLANKS	O	O	O
4. MATRIX SPIKES	N/A	N/A	N/A
5. DUPLICATE ANALYSIS	N/A	N/A	N/A
6. ICP QC	M		
7. FAA QC			
8. LCS	O	O	O
9. SAMPLE VERIFICATION	O	O	O
10. OTHER QC	N/A	N/A	N/A
11. OVERALL ASSESSMENT	M	O	O

O = Data had no problems.
M = Data qualified because of minor or major problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: One lead ICP coefficient of variation was greater than 20 percent.

NOTABLE PERFORMANCE: The data package arrived 24 days early for the 35-day contractual turnaround requirement.

INORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25319 **SDG** MFGR02 **SITE** W SILVER **LAB** SENTIN

COMMENTS: The laboratory analyzed two water samples for total metals and cyanide by SOW ILM04.0. The samplers identified sample MFG-R02 as a rinsate and sample MFG-R03 as a field blank. The laboratory met the contractual 35-day data package turnaround requirement.

Rinsate sample MFG-R02 contained lead and zinc above the CRDL's, and field blank sample MFG-R03 contained lead at the CRDL. The data package is technically provisional because of a problem with an ICP coefficient of variation. The technical usability of the sample results is discussed below, and any qualifications are listed in the attached Data Summary Table.

The reviewer conducted an Evidence Audit for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. The samples arrived at the laboratory preserved to the proper pH and temperature. The laboratory met contractual and technical holding time criteria for all sample analyses.

2. **Calibrations:** Acceptable. Instrument calibrations met contractual requirements. CRDL standard analyses indicated acceptable instrument performance near the CRDL's.

3. **Blanks:** Acceptable. All laboratory blanks met contractual criteria. The laboratory reported four analytes at concentrations below the CRDL's in the preparation and/or calibration blanks. Calcium, magnesium, and potassium calibration blank concentrations affected sample results below the CRDL's.

   Rinsate/Field Blank: The laboratory reported 11 target analytes in these samples. Most of the reported analyte

CASE 25319 SDG MFGR02 SITE W SILVER LAB SENTIN

3. **Blanks (continued):**

concentrations were below the CRDL's, and some of those below the CRDL's were laboratory blank effects. Rinsate sample MFG-R02 contained lead and zinc above the CRDL's, and field blank sample MFG-R03 contained lead at the CRDL. Any potential effects on associated sample results will be addressed in the data review report/s for those samples.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Matrix spikes are not required for rinsate or field blank samples.

5. **Duplicate Analysis:** Laboratory duplicates are not required for rinsate or field blank samples.

6. **ICP Quality Control:**

Interference Check Sample: Acceptable. Analyte recoveries for True Solution AB were within the QC limits. ICS analyses indicated acceptable application of interelement and background corrections.

Serial Dilution: Serial dilutions are not required for rinsate or field blank samples.

Coefficients of Variation: Provisional. Consistent replicate ICP readings indicated acceptable instrument precision for most analyses. The reviewer qualified the lead result for sample MFG-R03 as estimated because the coefficient of variation exceeded 20 percent.

7. **Furnace Atomic Absorption (FAA) Quality Control:** FAA was not used for this SDG.

8. **Laboratory Control Sample (LCS):** Acceptable. All LCS analyte percent recoveries were within the QC limits.

9. **Sample Verification:** The laboratory correctly reported all sample results. The reviewer contacted the laboratory for corrections of other minor reporting problems (see attached FAX Record Log).

10. **Other QC:** No additional QC was requested for this SDG.

INORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25319 **SDG** MFGR02 **SITE** W SILVER **LAB** SENTIN

11. Overall Assessment: The data package is technically provisional with the following problem.

The reviewer qualified one lead result as estimated because the ICP coefficient of variation was greater than 20 percent.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT Region 6 qualifiers assigned to results in the data review process.

U Undetected at the laboratory reported detection limit (IDL).

L Reported concentration is between the IDL and the CRDL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.

^ High bias. Actual concentration may be lower than the concentration reported.

v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25319

SDG. No.: MFGR02

Reviewer: M. FERTITTA

Laboratory: SENTIN

Matrix: WATER

Units: ug/L

EPA TR #=>	MFG-R02	FLAG	MFG-R03	FLAG		FLAG		FLAG		FLAG		COMMENTS
ALUMINUM	26.5	U	26.5	U								
ANTIMONY	3.5	L	2.6	U								
ARSENIC	1.9	U	1.9	U								
BARIUM	0.80	U	0.80	U								
BERYLLIUM	0.10	U	0.10	U								
CADMIUM	0.30	U	0.30	U								
CALCIUM	113	LUC	50.0	LUC								
CHROMIUM	3.1	L	0.83	L								
COBALT	1.4	U	1.4	U								
COPPER	8.9	L	1.4	U								
IRON	45.4	L	16.7	L								
LEAD	3.4		3.0	J								
MAGNESIUM	51.7	LUC	35.3	LUC								
MANGANESE	2.2	L	0.86	L								
MERCURY	0.10	U	0.10	U								
NICKEL	1.8	U	1.8	U								
POTASSIUM	91.4	LJ^	52.4	LUC								
SELENIUM	2.3	U	2.3	U								
SILVER	0.90	U	0.90	U								
SODIUM	132	U	132	U								
THALLIUM	3.5	U	3.5	U								
VANADIUM	2.3	U	2.3	U								
ZINC	51.7		12.1	L								
CYANIDE	1.6	L	1.4	U								

ase No. 25319	SDG No. MFGR02	SDG Nos. To Follow	SAS No.	Date Rec 03/03/97

EPA Lab ID: SENTIN
Lab Location: Huntsville, AL
Region: 6 Audit No.: 25319/MFGR02
Re_Submitted CSF? Yes ______ No X
Box No(s): ONE
COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?	X		
20a. If "NO", does the copy indicate where original documents are located?			X

	Signature	Printed Name/Title	Date
udited by:	Michael J. Fertitta	Mike Fertitta/ESAT Data Reviewer	03/05/97
Audited by:			
udited by:			

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ______ Date Entered: ______ Date Reviewed: ______

Entered by: ______ ______

Reviewed by: ______ ______

Signature Printed Name/Title

Lockheed Martin Services Group
ESAT Region 6

I-2093

10101 Southwest Freeway, Suite 500, Houston, TX 77074
Telephone: (713) 988-2993

FACSIMILE COVER SHEET

Please deliver the following page to:

Name Melvin Kilgore

Firm SENTIN

Address 2800 Bob Wallace Avenue, Suite L3

City Huntsville **State** AL 35805

Telephone (205) 534-9800 **Ext.** ____________

Fax Telephone No. (205) 534-9878 **Ext.** ________

Sender:

Name Michael J. Fertitta

Date March 7, 1997 **Time** __________________

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 988-2993.

MESSAGES:

Fax Model No. Brother Intellifax 3500ML, (713) 988-2994

In Reference To
Case 25319 SDG MFGR02
ESAT File No. I-2093

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: March 7, 1997
Laboratory Name: SENTIN
Lab Contact: Melvin Kilgore
Region: 6
Regional Contact: Michael J. Fertitta-ESAT
FAX initiated by: ____ Laboratory X Region

In reference to data for the following samples:

MFG-R02
MFG-R03

Summary of Questions/Issues:

A. ICP

The reviewer was unable to verify the ICP preparation date reported on Form 13 (page 16) because the ICP Digestion Batch Summary (page 56) was inadvertently submitted for case 25314, SDG MFHC48. Please submit the Batch Summary for case 25319, SDG MFGR02 and make sure that the correct preparation date was reported on Form 13.

B. Mercury

The Run Sheet (page 44) and Digestion Batch Summary (page 57) indicate that the preparation date reported on Form 13 (page 17) should be 02/24/97, not 02/21/97. Please correct and resubmit Form 13.

C. Cyanide

The Run Sheet (page 52) indicates that the preparation date was 02/24/97. However, a preparation date of 02/21/97 was reported on the Batch Sheet (page 59) and Form 13 (page 18). Please make the necessary correction/s and resubmission/s.

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

The EPA expects the laboratory to look into the above items and submit the data within 7 days to:

Attn: Mahmoud El-Feky - U.S. EPA
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2993.

Michael J. Fertitta
Signature

03/07/97
Date

Distribution: (1) Lab Copy, (2) Region Copy

U.S. EPA - CLP
1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFGR02

ab Name: SENTINEL, INC. Contract: 68-D5-0167

ab Code: SENTIN Case No.: 25319 SAS No.: SDG No.: MFGR02

trix (soil/water): WATER Lab Sample ID: 05221S

evel (low/med): LOW Date Received: 02/20/97

Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.5	U		P
7440-36-0	Antimony	3.5	B		P
7440-38-2	Arsenic	1.9	U		P
7440-39-3	Barium	0.80	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	113	B		P
7440-47-3	Chromium	3.1	B		P
7440-48-4	Cobalt	1.4	U		P
7440-50-8	Copper	8.9	B		P
7439-89-6	Iron	45.4	B		P
7439-92-1	Lead	3.4			P
7439-95-4	Magnesium	51.7	B		P
7439-96-5	Manganese	2.2	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	U		P
7440-09-7	Potassium	91.4	B		P
7782-49-2	Selenium	2.3	U		P
7440-22-4	Silver	0.90	U		P
7440-23-5	Sodium	132	U		P
7440-28-0	Thallium	3.5	U		P
7440-62-2	Vanadium	2.3	U		P
7440-66-6	Zinc	51.7			P
	Cyanide	1.6	B		CA

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

2

U.S. EPA - CLP
1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MFGR03

ab Name: SENTINEL, INC. Contract: 68-D5-0167

ab Code: SENTIN Case No.: 25319 SAS No.: SDG No.: MFGR02

atrix (soil/water): WATER Lab Sample ID: 05222S

evel (low/med): LOW Date Received: 02/20/97

Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.5	U		P
7440-36-0	Antimony	2.6	U		P
7440-38-2	Arsenic	1.9	U		P
7440-39-3	Barium	0.80	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	50.0	B		P
7440-47-3	Chromium	0.83	B		P
7440-48-4	Cobalt	1.4	U		P
7440-50-8	Copper	1.4	U		P
7439-89-6	Iron	16.7	B		P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	35.3	B		P
7439-96-5	Manganese	0.86	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	U		P
7440-09-7	Potassium	52.4	B		P
7782-49-2	Selenium	2.3	U		P
7440-22-4	Silver	0.90	U		P
7440-23-5	Sodium	132	U		P
7440-28-0	Thallium	3.5	U		P
7440-62-2	Vanadium	2.3	U		P
7440-66-6	Zinc	12.1	B		P
	Cyanide	1.4	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

APPENDIX D

Reference 3

PR/VSI REPORT

FOR

TRINITY VALLEY IRON AND STEEL
FORT WORTH, TEXAS

PREPARED FOR:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VI
ALLIED BANK TOWER, 12TH FLOOR
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

UNDER

CONTRACT NO. 68-01-7374
WORK ASSIGNMENT NO. R26-01-18

PREPARED BY:

A.T. KEARNEY, INCORPORATED
1 LAGOON DRIVE
REDWOOD CITY, CALIFORNIA 94605

AND

MITTELHAUSER CORPORATION
1240 IROQUOIS DRIVE, SUITE 102
NAPERVILLE, ILLINOIS 60566

AUGUST 1987

A.T. Kearney, Inc.
222 South Riverside Plaza
Chicago, Illinois 60606
312 648 0111

Management
Consultants

ATKEARNEY

August 26, 1987

Mr. Tom Clark
Regional Project Officer
U.S. Environmental Protection Agency
Region VI
Allied Bank Tower
1445 Ross Avenue
Dallas, Texas 75202-2733

Reference: EPA Contract No. 68-01-7374; Work Assignment No. R26-01-18; PR/VSI Report for Trinity Valley Iron and Steel Company, Fort Worth, Texas, EPA Identification No. TXD980626048

Dear Mr. Clark:

Enclosed is the PR/VSI Report for Trinity Valley Iron and Steel Company in Fort Worth, Texas. A total of seventeen solid waste management units (SWMUs) and one area of concern were identified.

Trinity Valley Iron and Steel Company (TVIS) is a grey and ductile iron foundry. It has operated at its present location since 1924. The facility produces water main fittings. As part of the foundry operations, waste sand (containing phenolic binders), slag, metal grindings, and lead and cadmium containing furnace emissions are produced.

The Furnace Dust Disposal Pit, a RCRA disposal unit, is currently in the process of clean closure. The ground water data suggests that there may be a phenol contamination problem at the site. This may be due to the material used to backfill the excavation. The majority of the material was spent sand. Analysis of spent sand has shown it to contain elevated levels of phenols. Much of the site has had backfilling of the foundry wastes, such as sand and slag, to increase usable land area.

Currently, all waste materials are disposed of off site. Except for the furnace dust, all wastes are brought to a central collection point (Class II Storage Area) prior to offsite disposal. The furnace dust is collected and removed as a hazardous waste in separate, appropriate containers.

Mr. Tom Clark
August 26, 1987
Page Two

Based on the results of the PR and VSI, there is indications of past and continuing releases from some of these units. At this time, a Sampling Visit (SV) should be initiated on a limited scale in order to better characterize some of the areas and materials at the TVIS facility.

If you have any questions, please do not hesitate to contact either Jim Levin, the Work Assignment Manager (202/296-4100) or myself.

Sincerely,

Lee Deets
Technical Director

Ann Anderson for
Don Beasley
Program Director

Enclosure

cc: E. Allen, EPA Region VI
B. Luthans, EPA Region VI
L. Boada, EPA Region VI
J. Grieve
A. Schaffer
J. Levin
D. LaRusso
P. Schanley

A.T. Kearney, Inc.
222 South Riverside Plaza
Chicago, Illinois 60606
312 648 0111

Management
Consultants

31092
RFA. Rep.

ATKEARNEY

August 27, 1987

8/87

Mr. Tom Clark
Regional Project Officer
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, TX , 75202-2733

Reference: EPA Contract No. 68-01-7374; Work Assignment No. R26-01-18; Trinity Valley Iron and Steel

Dear Mr. Clark:

Enclosed are two page corrections for the above referenced PR/VSI report. The report was transmitted to you yesterday. I hope this has not created an inconvenience for you.

Should you have any questions, please advise.

Sincerely,

ee A. Deets
Tech al Director

Enclosure

cc: E. All EPA Region VI
W. Lutha EPA Region VI
L. Boada, EPA Region VI
D. Beasley
J. Grieve
A. Schaffer
M. Huls - HLA-H
C. Mays - Mittelhauser Corp.

0628E-CH

waste management units identified during the Preliminary Review (PR) was obtained from the following principal sources:

- USEPA Region VI RCRA files (correspondence, technical memos, inspection reports, maps, and drawings);
- Texas Department of Water Resources[1] files (photographs, correspondence, inspection reports, maps, and drawings);
- The facility RCRA Part A Permit Application;
- Consulting engineering reports of services performed at the facility;
- USDA-SCS Soil Survey for Tarrant County, Texas; and
- USGS topographic maps.

The Visual Site Inspection (VSI) was performed on July 21 and 22, 1987. The Trinity Valley Iron and Steel Company (TVIS) representatives who were present included Michael Widick, Foundry Manager, Michael Wright, President, and Michael Montoya. The A.T. Kearney subcontractor representatives were from Mittelhauser Corporation.

Section 2.0 of this report contains a description of the TVIS facility, including its historical and current operations. Individual SWMUs also are identified in Section 2.0, along with a summary description of the wastes managed by the facility. Section 3.0 provides an overview of the environmental setting at the facility, comprising meteorology and air quality, floodplain and surface water, geology and soils, ground water, and receptor information. In Section 4.0, a broad assessment of release pathways is made, covering the potential for releases to soil, ground water, surface water, and air. Section 5.0 contains detailed discussions of each SWMU, while Section 6.0 covers other areas of concern (i.e., releases from production areas, spills, and evidence of contamination of unknown origin). Section 7.0 provides conclusions and recommendations (Enforcement Sensitive). Section 8.0 provides a list of references. The VSI field log and VSI photograph log are presented as appendices to the report.

[1]Texas Department of Water Resources changed name to Texas Water Commission, as noted in the September 4, 1985 Federal Register.

PR/VSI REPORT

FOR

TRINITY VALLEY IRON AND STEEL
FORT WORTH, TEXAS

PREPARED FOR:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VI
ALLIED BANK TOWER, 12TH FLOOR
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

UNDER

CONTRACT NO. 68-01-7374
WORK ASSIGNMENT NO. R26-01-18

PREPARED BY:

A.T. KEARNEY, INCORPORATED
699 PRINCE STREET
ALEXANDRIA, VIRGINIA 22314

AND

MITTELHAUSER CORPORATION
1240 IROQUOIS DRIVE, SUITE 102
NAPERVILLE, ILLINOIS 60566

AUGUST 1987

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EXECUTIVE SUMMARY

The Trinity Valley Iron and Steel Company (TVIS) is a grey and ductile iron foundry located in Fort Worth, Texas. The facility has been operated at this location since it opened in 1924. The facility produces water main fittings. As part of the foundry processes, waste sand (containing phenolic binders), slag, metal grindings, and lead and cadmium containing furnace emissions are produced.

A Preliminary Review (PR) and Visual Site Inspection (VSI) were performed on TVIS in July 1987. During the PR/VSI, a total of 17 Solid Waste Management Units (SWMUs) were identified, along with one Area of Concern (AOC). The Furnace Dust Disposal Pit is currently in the completion stages of clean closure. Some ground water data suggests that there is a potential phenol contamination problem at the site. This may be due to the majority of the backfill material used to fill the closure excavation was spent sand, which has been shown to have elevated levels of phenols.

Currently, all waste materials are disposed of off site. A central collection point (Class II Storage Area) is used to hold all wastes for offsite disposal, except for the furnace dust. The furnace dust is collected and removed as a hazardous waste in separate, appropriate containers.

Based on the results of the PR and the VSI, there is probable evidence of past and continuing releases at some of these units. At this time, sampling should be initiated on a limited scale in order to better characterize some of the areas and materials at TVIS.

1.0 INTRODUCTION

This section of the Preliminary Review (PR)/Visual Site Inspection (VSI) report covers the purpose and scope of the RCRA Facility Assessment (RFA) program. The contents of the other sections of this report also are described.

1.1 Purpose and Scope of the RFA Program

The 1984 Hazardous and Solid Waste Amendments (HSWA) provide new authority to U.S. Environmental Protection Agency (EPA) to require comprehensive corrective actions on solid waste management units (SWMUs) and other areas of concern (AOC) at interim status hazardous waste management facilities, particularly those applying for RCRA permits. These corrective actions are intended to address unregulated releases of hazardous constituents to air, surface water, soil, and ground water, as well as the generation of subsurface gas.

One of the major segments of EPA's corrective action program consists of RCRA Facility Assessments (RFAs) to identify releases or potential releases requiring further investigation. According to EPA's RCRA Facility Assessment Guidance Document, the four purposes of an RFA are to:

1. Identify and gather information on releases at RCRA regulated facilities;

2. Evaluate SWMUs and areas of concern for releases to all media and regulated units for releases other than ground water;

3. Make preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility; and

4. Screen from further investigation those SWMUs which do not pose a threat to human health and the environment.

The three basic steps of an RFA consist of a preliminary review (PR) of available information, a visual site investigation (VSI) to obtain additional information on releases, and a sampling visit (SV) to fill the data gaps by obtaining field and analytical data.

1.2 Contents of this Report

This report presents the results of the PR and VSI of the Trinity Valley Iron and Steel Company (TVIS) facility located in Fort Worth, Texas. Information regarding hazardous and solid waste management units identified during the Preliminary Review (PR) was obtained from the following principal sources:

- USEPA Region VI RCRA files (correspondence, technical memos, inspection reports, maps, and drawings);

- Texas Department of Water Resources[1] files (photographs, correspondence, inspection reports, maps, and drawings);

- The facility RCRA Part A Permit Application;

- Consulting engineering reports of services performed at the facility;

- USDA-SCS Soil Survey for Tarrant County, Texas; and

- USGS topographic maps.

The Visual Site Inspection (VSI) was performed on July 21 and 22, 1987. The Trinity Valley Iron and Steel Company (TVIS) representatives who were present included Michael Widick, Foundry Manager, Michael Wright, President, and Michael Montoya. The A.T. Kearney subcontractor representatives were from Mittelhauser Corporation.

Section 2.0 of this report contains a description of the TVIS facility, including its historical and current operations. Individual SWMUs also are identified in Section 2.0, along with a summary description of the wastes managed by the facility. Section 3.0 provides an overview of the environmental setting at the facility, comprising meteorology and air quality, floodplain and surface water, geology and soils, ground water, and receptor information. In Section 4.0, a broad assessment of release pathways is made, covering the potential for releases to soil, ground water, surface water, and air. Section 5.0 contains detailed discussions of each SWMU, while Section 6.0 covers other areas of concern (i.e., releases from production areas, spills, and evidence of contamination of unknown origin). Section 7.0 provides a list of references. The VSI field log and VSI photograph log are presented as appendices to the report.

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[1]Texas Department of Water Resources changed name to Texas Water Commission, as noted in the September 4, 1985 Federal Register.

2.0 FACILITY DESCRIPTION

This section of the PR/VSI report highlights the location of the facility, the historical and current operations, the solid waste management units (SWMUs) identified, and the waste materials managed at the facility.

2.1 Location [5,6]

Trinity Valley Iron and Steel Company (TVIS) is located at 3400 Bryce Avenue in Fort Worth, Tarrant County, Texas. It occupies 16 acres of land in the vicinity of University Drive and Bryce Avenue (Figures A and B) [5]. The site is at approximately 32 degrees, 44 minutes, 20 seconds north latitude and 97 degrees, 22 minutes, 10 seconds west latitude [6].

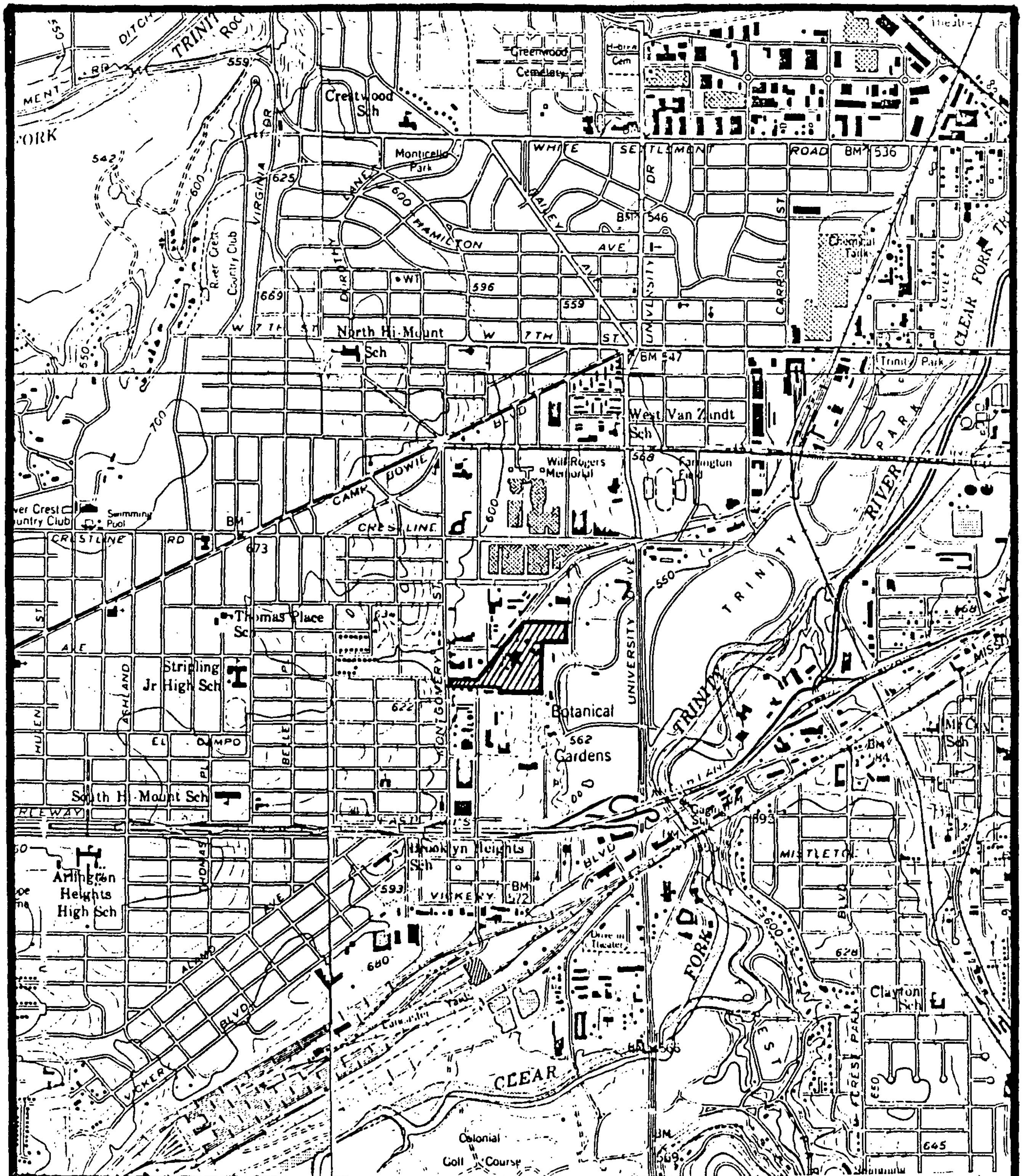
2.2 Historical and Current Operations [5,6,8,20,24]

TVIS operates a grey iron foundry located in Fort Worth, Texas. The site has been operated as a foundry by TVIS since about 1924. There are several process buildings and most of the area surrounding these buildings is paved [5,20].

The site slopes to the southeast towards an unnamed tributary to the Clear Fork of the Trinity River [6]. However, over the years there has been substantial filling of the area near the creek. A retaining wall was built of 55-gallon drums filled with slag and backfilled with spent foundry sand and dirt along much of the east and south boundaries. This wall and associated backfilling has raised the site elevation by over twenty feet in many areas [5]. Figure B shows the locations of the plant facilities and unique features.

The grey iron foundry process is basically taking scrap metals and remelting them in a furnace to produce new cast iron products. TVIS utilizes scrap iron from various geographical sources. The scrap is melted down in a cupola furnace. Up until 1984, slag was drawn off the top of the molten mass and drummed. The slag was allowed to cool and harden [5]. Currently, the slag is subjected to a high pressure water stream which causes it to cool and harden into a granular material [20].

Since 1977, emissions from the cupola furnace have been fed to a baghouse. The ash or dust from the baghouse is then removed for disposal. An electro-static precipitator was used from about 1968 to 1977 to control emissions from the cupola furnace [20].



QUADRANGLE LOCATION

FIGURE A

TRINITY VALLEY IRON AND STEEL COMPANY
FORT WORTH, TEXAS
SITE LOCATION MAP
Source: USGS 7.5' topographic maps

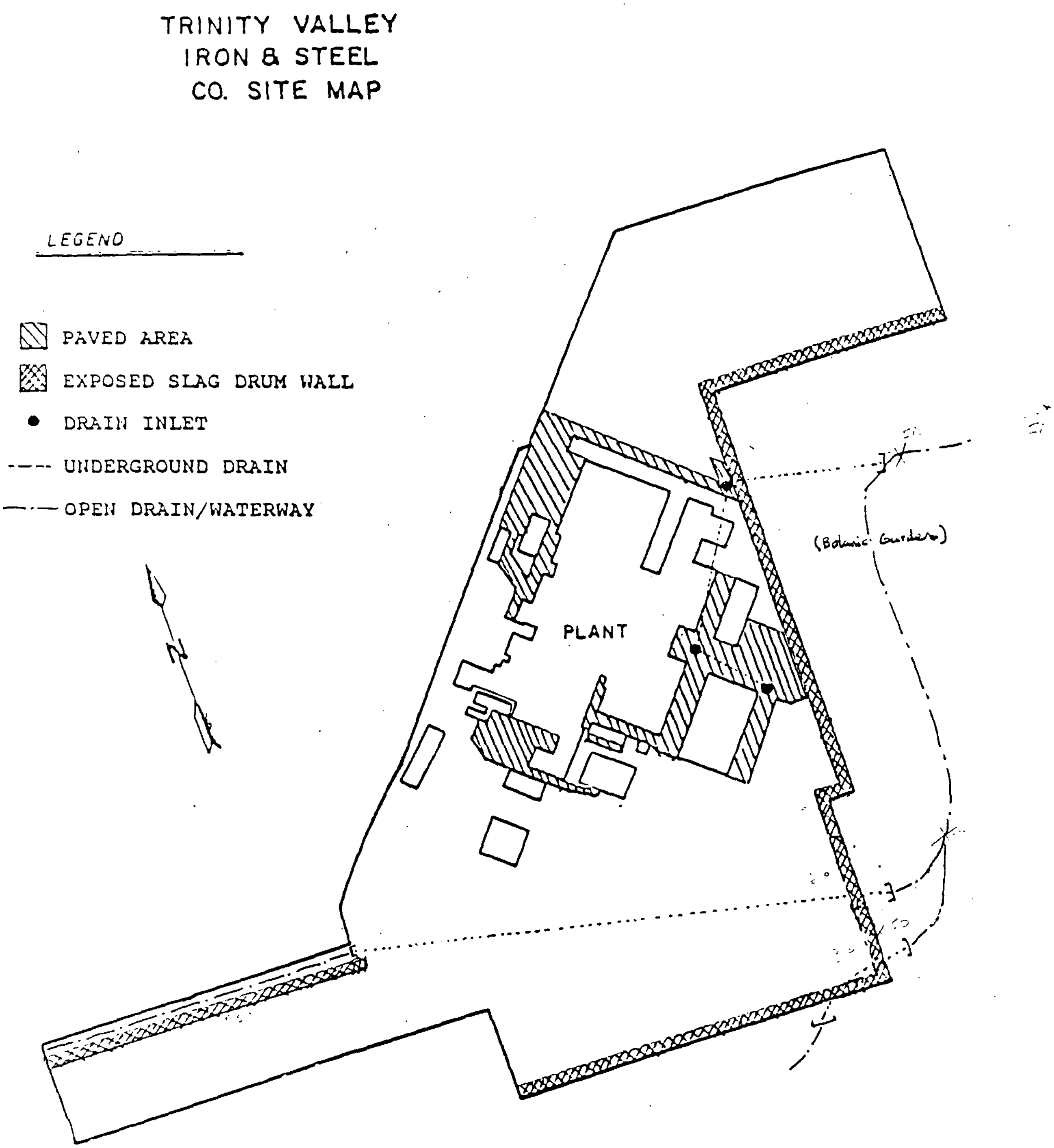


FIGURE B
TRINITY VALLEY IRON AND STEEL COMPANY
FORT WORTH, TEXAS
FACILITY MAP

The molten iron is poured into molds to make the final products. These casting molds and cores are usually prepared from sand and mixed with a binder. Some materials used as binders are bentonite and phenolic urethane. The phenolic binder comes in both a liquid and dry flake form. These materials are mixed with the sand in order to give it the ability to hold a desired shape. Some molds can be made of a more permanent nature, using metals [20].

Finished cast products are removed from the molds and most of the used sand is recycled back into the molding process. The castings are subjected to a shot-blasting which removes any adhering sands and produces a clean finish. Some grinding may also have to be done to remove larger pieces of metal.

After the castings have been cleaned, they are dipped in a bituminous solution that gives water main fittings their characteristic black coating. This coating is the same material used throughout the country for the treatment of public water supply piping and fittings. It is a non-hazardous, inert coating once it has been applied and dries. Fittings are coated inside and outside in the dipping process [20,24].

TVIS also operates machine and pattern shops as support processes. Maintenance operations are also an integral part of the facility operation [20].

2.3 Identification of Solid Waste Management Units (SWMUs) [5,8,9,13,18,20,24]

As a result of the PR and VSI, a total of seventeen Solid Waste Management Units (SWMUs) were identified. These units are listed in Table 2 and illustrated in Figure C. These units are either directly invilved with the production of the cast products or considered to be a result of the support operations. There is also an Area of Concern (AOC) indicated on the table and figure (UST Naphtha). This AOC will be addressed in Section 6.0.

The nucleus of the foundry is the furnace. The emissions from the furnace contain elevated amounts of lead and cadmium [12]. This material was disposed of in an onsite pit for several years.

The inactive furnace dust disposal pit (SWMU 1) is the only RCRA disposal unit. This unit was utilized from 1968 to 1985. It is no longer utilized and waste materials have been removed [13]. Clean closure approval has not been granted to date due to ground water monitoring deficiencies [18,20].

TABLE 1
TRINITY VALLEY IRON AND STEEL COMPANY
SOLID WASTE MANAGEMENT UNITS (SWMUs)
AND AREAS OF CONCERN (AOCs)
FORT WORTH, TEXAS

SWMU NO.	UNIT NAME	WASTES MANAGED	OPERATIONAL DATES	RCRA REGULATED	+ GW
1	Furnace Dust Disposal Pit	D008 D006	1968-1985	Yes	Yes
2	Baghouse	D008 D006	1977-Present	No	No
3	Baghouse Dust Container	D008 D006	1985-Present	No	No
4	Shot-blast Fines Collection	Fines	** -Present	No	No
5	Core Butt Collection	Spent Sand	** -Present	No	No
6	Belt Cooler Fines Collection	Fines	** -Present	No	No
7	Muller Fines Collection	Fines	1987-Present	No	No
8	Class II Storage Area	Fines, Spent Sand, Slag	1979-Present	No	No
9	Slag Management Area	Slag	1924-Present	No	No

+ Ground water monitoring
** Date unknown

TABLE 2 (Continued)
TRINITY VALLEY IRON AND STEEL COMPANY
SOLID WASTE MANAGEMENT UNITS (SWMUs)
AND AREAS OF CONCERN (AOCs)
FORT WORTH, TEXAS

SWMU NO.	UNIT NAME	WASTES MANAGED	OPERATIONAL DATES	RCRA REGULATED	+ GW
10	Waste Oil Storage Area	Waste Oils	1980-Present	No	No
11	NE Run-off Sump	Waste Oils	1980-Present	No	No
12	Sump Storage Tank	Oily Run-off	1980-Present	No	No
13	Slag Drum Wall/ Sand Fill	Slag, Spent Sand	1924-Present	No	No
14	Grindings Disposal	Grindings	** - **	No	No
15	Dipping Area	Bituminous Coating	** -Present	No	No
16	UST Gasoline Area (+)	-	** -Present	No	No
17	UST Diesel Area	-	** -Present	No	No
AREA OF CONCERN					
A	UST Naphtha	-	1980-Present	No	No

\+ Ground water monitoring
** Date unknown
(+) UST = Underground storage tank

TRINITY VALLEY
IRON & STEEL
CO. SITE MAP

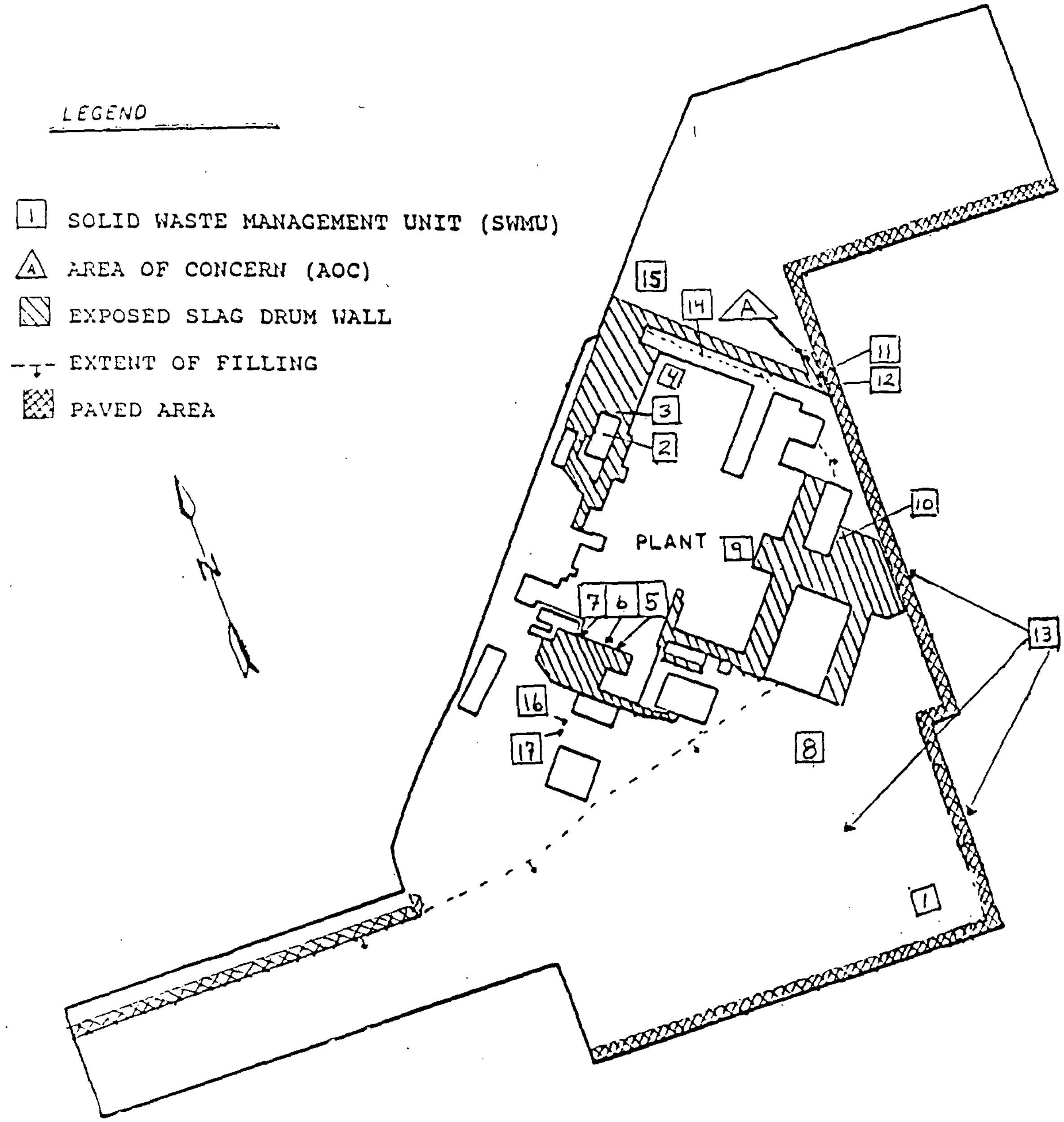


FIGURE C
TRINITY VALLEY IRON AND STEEL COMPANY
FORT WORTH, TEXAS
SOLID WASTE MANAGEMENT UNITS (SWMUs)
AND
AREAS OF CONCERN (AOCs)

This material is currently being collected in roll-off containers (SWMU 3) from a baghouse (SWMU 2) [9].

Several processes produce small amounts of fine materials and grindings that are currently collected and stored in a central area for off-site disposal (SWMU 8). The muller fines collection system (SWMU 7) is an air jet passed through a sand mixer. The fines are collected for disposal. Other air-type, or cyclone, systems are used to collect fines from shot-blasting for cleaning the final cast products (SWMU 4) and collecting fines from the used sand before it is recycled (SWMU 5). Larger pieces of the used core and mold sands are also collected (SWMU 6) for disposal in the central storage location [20].

Since 1984, slag has also been collected (SWMU 9) and stored in the central storage area (SWMU 8) [20]. However, both slag and spent sand were disposed of on site previously. The major portion of the site east and south of the facility buildings has been subjected to landfilling of slag and spent sand (SWMU 13). This practice probably began as early as 1924. This also involved the construction of several lifts of slag filled drums to produce a wall or terrace effect [5,20].

Grindings from the machining of cast products and machine shop operations are also collected. What is not recycled back into the foundry process is placed in the central disposal area. Prior to the use of the central disposal collection system, the grindings were drummed and disposed of on site (SWMU 14) in a similar fashion as the slag filled drums [20].

Waste oils generated through machining and mainternatnce operations are collected and stored onsite (SWMU 10). They are currently removed by a recycler [8,20]. These oils were used for dust suppression along with material removed by an oil /water separator located in a run-off colection sump (SWMU 11). The sump material, the "lighter than water" fraction, was collected and stored in a truck-mounted tank (SWMU 12). This material is also currently being removed by a recycler [20].

The finished products are dippped in a bituminous coating that contains naphtha and asphalt [20,24]. The dipping area (SWMU 15) is subject to dripping of excess coating when the products are removed from the vat.

Gasoline and diesel fuel are stored on site in underground storage tanks. The area directly above these tanks is subject to spillage and leakage from product mishandling (SWMU 16, SWMU 17). These tanks are both alleged to be at least 25 years old [20].

2.4 Summary of Wastes Handled [5,8,9,11,20,21]

The only reported listed hazardous waste currently produced at TVIS is the baghouse dust (D008) (D006). Analysis has shown this material to contain elevated amounts of lead and cadmium [9,11].

Other waste materials generated from the foundry processes are spent sand and slag. The sand is left after the molds are broken to remove the cast product. Analysis of the spent sand has shown it to contain elevated levels of phenols [21]. The main constituent of the sand is silica.

Slag is a glass-like solid material when it cools. It is impurities and waste from the heating of the charge fed to the cupola furnace [5].

Fines from cyclone collectors are also generated. Fines are collected from sand mixing operations, sand cooling operations, and blast cleaning of the finished cast products. The main constituent of these fines is sand. There may also be some minute metal fines [20].

Grindings from the machine shop, cleaning of final products, and maintenance activities are also generated. The majority of this material is metallic [20].

Waste oils are also generated as part of the facility processes [11]. These oils come mainly from process machinery and yard vehicle maintenance. In the past, these oils were used onsite as a dust suppressant. Run-off from the northeast portion of the facility is collected by a sump where any fraction lighter than water (oil) is removed. This material was also put back on the property in the dust suppressing process [9]. As of 1986, the waste oil materials are no longer used for dust suppression [20].

There is also a certain amount of general plant trash generated from daily operations [8]. Table 1 provides a listing of the waste materials derived from facility operations.

TABLE 2
WASTE MATERIALS
TRINITY VALLEY IRON AND STEEL COMPANY
FORT WORTH, TEXAS

WASTE MATERIAL	DESCRIPTION	USEPA WASTE NUMBER
Furnace Dust	Fine-grained material contains elevated levels of lead and cadmium (furnace emission dust)	D008 D006
Spent Sand	Mainly silica sand from used molds and cores	*
Slag	Glass-like material mainly impurities (non-metal) from melting of iron	*
Grindings	Metallic grindings and shavings from machining operations	*
Fines	Mainly silica sand fines removed from new or recycled core and molding sands	*
Waste Oils	Oils from facility equipment, cutting oils from machine shop	*
Oily Run-off	"Lighter than water" fraction (oils), removed by oil/water separator in NE run-off sump	*

* Not a listed hazardous waste

3.0 ENVIRONMENTAL SETTING

This section of the PR/VSI report covers meteorology and air quality, floodplain and surface water characteristics, geologic and soil information, ground water characteristics, and receptor information.

3.1 Meteorology and Air Quality [1,5]

This area of Texas has a subtropical climate. The average daily temperature is 47 degrees F in winter and 82 degrees F in summer. Precipitation averages 32.10 inches per year. About three inches of this precipitation falls in the form of snow. The majority of the precipitation occurs during the months of April and May. The heaviest 24-hour rainfall event recorded was 9.57 inches during September, 1932, in Fort Worth [1]. Data from the Camp Bowie Station (approximately 100 miles northwest) Texas Air Control Board for 1983 indicated that the pH of the rainfall in that area ranged from 4.6 to 5.0 with a mean of 4.8 [5].

Most thunderstorm activity occurs in the spring. Windstorms, usually associated with thunderstorms, are sometimes destructive. The average relative humidity measured in midafternoon is approximately 55 per-cent. The prevailing winds are from the south with the highest average speed in March and April of 14 miles per hour [1].

No information on air quality or the effects of anthropogenic emissions were located during the PR or VSI.

3.2 Floodplain and Surface Water [1,3,4,5,10,20]

The TVIS facility lies in an area higher than the 100 year floodplain of the Clear Fork of the Trinity River [4]. The site lies approximately 2,000 feet west of the river (Figure A). There is an unnamed creek that flows near the eastern boundary of the facility. This creek is a direct tributary of the Clear Fork of the Trinity River [10]. A drainage ditch running east in the southern portion of the site has been channeled through an underground culvert which outfalls into the unnamed creek near the toe of the slag drum retaining wall (Figure B) [3,5]. There is a similar drainage situation that crosses only the southeast corner of the property [20]. The Trinity River is used for recreation in the area downstream of the facility [10].

3.3 Geology and Soils [1,2,3]

The predominant soil family in the vicinity of the TVIS facility is a fine-loamy, carbonatic, thermic Typic Calciustoll. The specific series underlying the facility is Sunev. These soils are described as well-drained, deep, loamy, upland soils. Slopes can range from 1 to 8 per-cent. They were formed on ancient stream terraces and on colluvium materials that were alkaline and loamy in nature. Sunev soils are typically 5 to 6 feet deep with a permeability range of 0.2 to 2.0 inches per hour. The surface soils are dark, greyish brown clay loams grading to pale brown or reddish yellow fine sandy loams, clay loams, or loams [1].

The bedrock beneath the site is limestone. This limestone is probably the top of the Duck Creek formation which is known to underlie the Quaternary alluvium associated with the terrace deposits of the Trinity River. The Duck Creek formation is a member of the Washita Group. It has a maximum depth of 100 feet [3]. The Trinity Group, which contains the Paluxy sand formation and is the major regional aquifer, is approximately 250 feet below the Duck Creek formation [2,3].

3.4 Ground Water [2,3,13]

The majority of the ground water in this area is obtained from the Paluxy sand formation which is a member of the Trinity Group. This unit slopes eastward in Tarrant County at a gradient of 35 to 40 feet per mile. Ground water flow is east to southeast. The piezometric surface is greater than 150 feet below the site. The ground water flow in the Paluxy sand is approximated to be 0.5 feet per year [2].

The water contained in the alluvium flows generally to the southeast towards the Clear Fork of the Trinity River. The water levels in this material will fluctuate on the basis of precipitation [3]. The depth to water in the alluvium is approximately 30 feet according to water level measurements taken on site [13]. The alluvium is not utilized as a potable water source in the vicinity of the site [2].

3.5 Receptor Information [2,3,6,20,22]

The TVIS facility lies in the southern portion of Fort Worth. The area surrounding the site displays a combination of land uses. To the north, south, and west of the facility are commercial and industrial areas. The eastern portion of the site overlooks the city of Fort Worth's Botanic Gardens. Residential area lies west beyond the industrial occupants. Within one mile of the site are a university medical facility and a municipal cultural center [6,20]

The drinking water supply for the city of Fort Worth and surrounding area is obtained from surface water sources. Numerous lakes and reservoirs are utilized in the Dallas/Fort Worth area. Drinking water intakes (reservoirs) are located upstream from TVIS [22].

Some limited water supplies for the area may still be obtained from wells drawing from the Paluxy sand formation. This aquifer lies below the alluvium and the Washita Group [2].

The Clear Fork of the Trinity River runs approximately 2,000 feet from the site. An unnamed creek that discharges into the river runs adjacent to the eastern site boundary. This unnamed creek is fed by drainage from the site and upgradient lands (Figure B) [3].

4.0 RELEASE PATHWAYS

This section of the PR/VSI report provides information on release pathways of air, surface water, soil, and ground water.

4.1 Ground Water Pathway [1,2,3,5,10,13,17,20]

The ground water in this area is first encountered at about 30 feet below the surface of the site [13]. This ground water level is relative to the river elevation [3]. The ground water utilized in this area is most likely withdrawn from the Trinity Group, mainly the Paluxy sand formation [2]. This formation is several hundred feet below the surface. Between the Paluxy and the surface alluvium is the Washita Group which is comprised of several different layers of limestones, marl, and clay [1]. The piezometric surface of the Paluxy sand indicates that this aquifer is separated from the surface alluvium [2]. Any drinking water supplies of the Paluxy sand would appear to be unaffected due to the lack of connection to the surface alluvium water table. The Paluxy sand formation is recharged by precipitation and infiltration from outcrops in the northwest part of Tarrant County [2].

The facility had installed monitoring wells around the Furnace Dust Disposal Pit (SWMU 1) in 1983 [5]. These wells were approximately 40 feet deep. They were equipped with a 36 inch well point/screen. Improper sealing of the wells caused the TWC to have TVIS install new, properly designed and located, monitoring wells [10]. The new well installation was completed after the removal of the waste materials from SWMU 1 in 1986 [20]. TVIS is currently in the process of collection and compilation of the first year of quarterly ground water monitoring data from these new wells for compliance [17,20].

4.2 Soil Pathway [1,2,3]

The soils in the vicinity of the site are of the Sunev series. These are generally loamy in texture and are considered to be well drained [1]. There is a potential for relatively soluble contaminants to migrate through this type of soil. The alluvium in which the soils were formed is approximately 30 feet deep [3]. It has a less permeable nature in that it has a silty clay texture [2].

4.3 Surface Water Pathway [6,10,20,22]

The Clear Fork of the Trinity River lies approximately 2,000 feet east of the site. A drainage ditch/culvert that passes under the site empties into an unnamed stream at the southeastern edge of the property. This stream channels through the botanical gardens adjacent to the site and into the Trinity River [10]. The course of the surface water from the site to the Trinity River is only about two-thirds of a mile [6].

The site slopes generally to the east. Surface run-off for much of the site is captured through a series of storm drains. This water is discharged into the unnamed stream. The original contour of the site also sloped to the east. The filling of a major portion of the site with foundry sands has created a more definite terrace situation. The fill material is generally quite porous and infiltration is rapid since it is mostly sand [20].

The Clear Fork of the Trinity River is used for recreation downstream from TVIS. Several miles upstream from the facility, the river has been dammed to create Benbrook Lake. This lake is used as a drinking water source for the area [6,22].

4.4 <u>Air Pathway</u> [1,5,6,7,8,9,18,20]

Prevailing winds are from the south [1]. A major portion of the city of Fort Worth lies to the north, or downwind, of the site. There is a botanical garden park located just east and north of TVIS [6].

The major source of potential air contamination would be a direct result of the cupola furnace operation. The furnace is documented as producing emissions that contain high levels of lead and cadmium in the particulate fraction [12]. These emissions are currently channeled through a baghouse where most of the particulates are removed. The furnace dust, or ash, was collected in large plastic bags and landfilled on site [5,18]. The dust is currently collected in a twenty or thirty cubic yard roll-off container and disposed of off site [7,20]. Prior to any emission controls (circa 1968) on the furnace, the particulates were expelled from the stack into the air [20].

During the time that the dust was landfilled on site, inspection reports by the TDWR had indicated that some of the bags were broken and the dust was available for wind transport [8].

Dust suppression was also noted in other TDWR inspections. Previously, waste oils were sprayed onto the yard area to control dust. This was done because Fort Worth has an ordinance for dust control. However, this practice was contrary to TDWR regulations and was considered an unauthorized disposal practice [9]. No official action was necessary as TVIS complied with the TDWR directive [20].

4.5 <u>Subsurface Gas</u> [16,20,21,23]

The waste considered to be most hazardous, the furnace dust, is by nature not capable of subsurface gas generation. The slag and metal grindings would also not be regarded as a source of gas production. The waste that has a definite potential for subsurface gas production is the spent sand (and fines from the sand). This is based on the fact that the spent sand has been shown to contain elevated levels of phenols [21]. The phenolic compounds are used as binders in the core and mold making processes [16]. Even though the sands is subjected to great heat when the molten metal is poured, residual phenols remain. Phenols are considered to be semi-volatile. They are slow to volatilize [23]. Spent sands have been disposed of on site since the facility began operations [20].

5.0 DESCRIPTION OF SOLID WASTE MANAGEMENT UNITS (SWMUs)

This section presents a detailed assessment of each SWMU located at the TVIS facility identified during the PR and VSI.

These descriptions encompass information on the SWMU including a physical description, dates of operation, wastes managed, release controls, history of releases, and potential for releases to ground water/soils, surface water, and air, plus the potential for subsurface gas generation. Table 3 provides a summary for each of the SWMUs.

5.1 SWMU 1: Furnace Dust Disposal Pit (VSI Photos 2, 4, 5)

5.1.1 Information Summary [3,5,7,8,10,17,18,20]

Unit Description : The furnace dust diposal pit (Pit) was utilized from 1968 until 1985 to accept ash or dust (D008, D006) from emission controls of the cupola furnace [10]. The furnace emissions contain levels of lead and cadmium greater than EP toxic limits [5]. From 1968 to 1977, an electro-static precipitator was the source of the material disposed of in the Pit [20]. The baghouse that is currently being operated to control cupola emissions was put into service in 1977 [5,20]. This is the only RCRA disposal unit at TVIS.

The Pit is located in the southeast section of the main property. It was formed through the construction and backfilling of the slag drum retaining wall [5]. The bottom of the Pit is the original soil surface. The Pit is unlined. Furnace dust was deposited into the Pit in 30-gallon plastic bags. The Pit area is approximately 110' x 110' with a depth of at least 20 feet and possibly up to 30 feet [5,8]. During a TDWR inspection (3/4/82), bags of ash were observed to have been broken and ash dispersed by the wind [18]. The disposal pit is located directly above an underground drainage culvert that outfalls on the eastern edge of the property. Migration of contaminants could potentially move into this culvert and be transported to the stream at the outfall [8].

Rather than prepare and submit a RCRA Part B Permit, TVIS submitted a plan for clean closure in 1984 [3,5]. As part of the clean closure, TVIS has removed the hazardous waste (furnace dust and sand) from the Pit and disposed of it at an approved landfill [7]. Ground water monitoring was instituted before closure operations began. However, poorly constructed monitoring wells resulted in unusable data. These wells were improperly sealed, creating a potential conduit for contaminant migration into the

TABLE 3

TRINITY VALLEY IRON AND STEEL COMPANY

SOLID WASTE MANAGEMENT UNIT (SWMU) SUMMARY AND RELEASE INFORMATION

FORT WORTH, TEXAS

SWMU NO.	UNIT NAME	WASTE MANAGED	OPERATIONAL DATES	RELEASE CONTROLS	HISTORY OF RELEASES
1	Furnace Dust Disposal Pit	D008	1968-1985	Clean closure in progress. Waste disposed in plastic bags. No liner.	Wind borne dust from broken bags, phenols detected in ground water
2	Baghouse	D008	1977-Present	Unit is built on concrete paved area	None reported
3	Baghouse Dust Container	D008	1985-Present	Container is completely enclosed.	None reported
4	Shot-blast Fines Clollection	Fines	** -Present	Containers are placed on paved areas	None reported
5	Core Butt Collection	Spent sand	** -Present	Containers are placed on paved areas	None reported
6	Belt Cooler Fines Collection	Fines	** -Present	Containers are placed on paved areas	None reported
7	Muller Fines Collection	Fines	** -Present	Containers are placed on paved areas	None reported
8	Class II Storage Area	Fines, Slag, Spent sand	1979-Present	None	None reported
9	Slag Management Area	Slag	1924-Present	Containers are located inside plant on paved surface	None reported
10	Waste Oil Storage Area	Waste Oils	** -Present	Drums and tank are placed on paved surface	None reported
11	NE Run-off Sump	Oily Run-off	1980-Present	Re-enforced concrete construction	Two reported instances of oils entering creek at outfall Note: Other connection to out-fall besides TVIS
12	Sump Storage Tank	Oily Run-off	1980-Present	Surface contour slopes towards sump under tank	None reported Note : TVIS did use this material for dust suppression at some time before 1986

** Date unknown

TABLE 3 (Continued)
TRINITY VALLEY IRON AND STEEL COMPANY
SOLID WASTE MANAGEMENT UNIT (SWMU) SUMMARY AND RELEASE INFORMATION
FORT WORTH, TEXAS

SWMU NO.	UNIT NAME	WASTE MANAGED	OPERATIONAL DATES	RELEASE CONTROLS	HISTORY OF RELEASES
13	Slag Drum Wall/ Sand Fill	Slag Spent Sand	1924-(1986) **	None	Ground water monitoring wells for SWMU 1 showed elevated levels of phenols.
14	Grindings Disposal	Metal fines Grindings	** - **	None	None
15	Dipping Area	Bituminous Coating	** -Present	None	None
16	UST Gasoline Area	(Gasoline)	(1957)-Present **	None	Stained surface soils
17	UST Diesel Area	(Diesel fuel)	(1962)-Present **	None	Stained surface soils

** Date unknown

natural strata below the fill [10]. New monitoring wells were installed and monitoring of the ground water was directed in order to assess the impact of the closed disposal unit. The first set of ground water samples from the properly constructed monitoring wells were obtained in September, 1986 [17].

Waste materials had been removed from the unit for closure purposes by October 1985. A total of just over 6,231 tons of material were removed for closure from the unlined pit. The Pit area was backfilled with spent sand and slag [9] and capped with clay. The cap was installed in June, 1986 [20].

The analyses from the first three quarters of ground water sampling indicate that there may be contamination. This has not been verified to date through statistical analysis of the data [17]. Phenols were detected in ground water samples collected in March, 1987 [17]. Phenols are a required analysis for the closure of this unit. However, phenol contamination will not be used in the determination of acceptable closure. Lead and cadmium values for this sampling were less than 0.05 mg/L and less than 0.01 mg/L, respectively [17].

<u>Dates of Operation</u> : The unit was constructed and began operation in 1968. It stopped accepting furnace dust in 1985. All waste material was removed from the unit by 1986.

<u>Wastes Managed</u> : Furnace emission control dust containing elevated levels of cadmium and lead (D008, D006) along with spent sand were disposed of in this unit. Closure activities removed the initial waste materials and replaced them with spent sand as a backfill material.

<u>Release Controls</u> : There were no release controls built into the unit originally (no liner or leachate collection system).

<u>History of Releases</u> : Ground water data shows elevated concentrations of phenols in monitoring well samples. Bags of ash were observed to be broken in the pit, allowing for soil contact.

5.1.2 Release Potential

Ground Water/Soils : There exists a high potential for past releases to soil and ground water by this SWMU. Ground water samples have not indicated contamination of lead and cadmium. Ground water analysis has shown elevated levels of phenols. Soils have been impacted due to the disposal of the material in bags that were observed by TDWR inspectors to have been broken. A high potential exists for continuing release of contaminants (phenols) based on the use of the spent sand as backfill material.

Surface Water : Impacts on surface water from this unit would be manifested in two basic patterns. Airborne particulates from broken bags could travel in surface run-off to the stream, or to collection drains located on the property and leachate.

The potential for past releases from this unit to surface water is moderate. The potential for continuing releases is low based on the closure activities such as removal and capping.

Air : The potential for past releases would be high. The potential for continuing releases would be very low due to the clay capping.

Subsurface Gas : There are no indications of subsurface gas generation from this unit. Due to the nature of the material disposed of in the Pit, furnace dust and spent sand as cover, the potential for past release is moderate. There would be a moderate potential for a continued release also due to the backfilling with the spent sand which contains phenols [19].

5.2 SWMU 2: Baghouse (VSI Photo 11)

5.2.1 Information Summary [12,13,20]

Unit Description: The baghouse is utilized to capture the particulate emissions from the cupola furnace. The baghouse was put in service in 1977 and is still in operation. The baghouse is made up of 8 sections with 120 bags per section. The entire unit measures approximately 51 feet long by 20 feet wide by 62 feet high. It is built on a concrete pad within the processing area of the facility. The area around the baghouse is also paved [20].

The furnace emissions are collected and piped to the baghouse. The dust or ash is collected in hopper boxes at the base of each section and sent via conveyor to a roll-off container adjacent to the baghouse [13]. The conveyor is an enclosed 1 foot diameter screw type. It is 56 feet long and connects the hopper boxes. There is approximately 10 feet of long flexible tubing to connect the conveyor to the roll-off container [20].

The dust contains elevated levels of lead and cadmium which classifies it as a hazardous waste based on the criteria of toxicity (D008, D006) [12]. Approximately 60 cubic yards of dust are generated every month [20].

During the VSI, the unit appeared to be in good operational condition. The connections between the sections (conveyor) and the container (SWMU 3) appeared to be adequate in order to control any release from these points.

Dates of Operation: The baghouse has been in operation since 1977. It is currently operating.

Wastes Managed: The baghouse is used to remove particulate emissions from the cupola furnace. The ash, or dust, contains elevated levels of lead (D008) and cadmium (D006).

Release Controls: No release controls for this unit.

History of Releases: There is no documented history of releases from this unit.

5.2.2 Release Potential

Ground Water/Soils: The potential for ground water or soil contamination due to past or continuing releases from this unit is low. The unit is located on a concrete pad and the area surrounding the baghouse is also concrete paved. The nature of the material is such that it is improbable that it could penetrate the paved surfaces. Cracks in the pavement could allow for escaped baghouse dust to enter the soils below.

Surface Water: There is a low potential for past or continuing releases from this unit. Due to the proximity of surface water and the path it would have to follow.

Air: By the nature of the unit, the waste material involved, and cupola furnace operations, there would exist a moderate potential for past or continuing releases due to mechanical failure.

Subsurface Gas: Due to the nature of the material and the unit, there would be a low potential for subsurface gas generation or release.

5.3 SWMU 3: Baghouse Dust Container (VSI Photo 11)

5.3.1 Information Summary [7,9,20]

Unit Description: The baghouse dust is currently being collected in standard twenty or thirty cubic yard roll-off containers. The containers are completely enclosed and are received with a plastic liner inside [20]. They are constructed of steel. These containers are labelled to indicate that the contents are a hazardous waste [9]. The containers are filled and removed in less than ninety days [7]. They are filled via the conveyor from the baghouse. The container is placed adjacent to the baghouse on the concrete pavement [20]. These containers have been used to collect the furnace dust since 1985 [20].

5.3.2 Release Potential

Ground Water/Soils: Due to the nature of the unit and the use of double plastic lined containers, The potential for a release to ground water or soils is low for both past and continuing releases.

Surface Water: The potential for relases would be based on the chance for mechanical failure of the container, connection to the baghouse, and/or container handling operations. The potential for past or continuing releases from this unit would be low.

Air: The potential for a past or continuing release to air from these containers would be low based on the use of plastic lined containers.

Subsurface Gas: Due to the nature of the unit and the wastes managed, a low potential would exist for past or continuing generation of subsurface gas.

5.4 SWMU 4: Shot-blast Fines Collection

5.4.1 Information Summary [20]

Unit Description: When castings are removed from the molds there may be some sand adhering to the castings or an undesirable finish appearance. In this situation the castings are subjected to a shot-blast which is similar to sand-blasting except for the use of steel shot in place of sand. The shot can be reused. The removed sand and metallic material is collected in a cyclone and deposited in an open, two cubic yard, steel recievng container located on a paved area just outside of a facility building. These containers are emptied periodically (on an as necessary basis) into the Class II storage area (SWMU 8). These materials are considered to be non-hazardous [20].

The pathway for the migration of these waste materials to reach surface water would consist of travel to a collection drain, the oil/water separator in the NE run-off sump (SWMU 11), and finally, the outfall to the creek [20].

Dates of Operation: The shot-blast fines collection is currently an active process. It is uncertain as to when this operation began [20].

Wastes Managed: These containers collect fines which are mainly spent sand with some metal fines.

Release Controls: The containers are placed on a paved surface.

History of Releases: There is no documented history of releases from this unit.

5.4.2 Release Potential

Ground Water/Soils: The potential for ground water or soil contamination from this unit would be low from past or continuing releases due to the nature of the material and containment.

Surface Water: The potential for a past or continuing release to surface water from this unit would be low based on the waste material and containment.

Air: The potential for a past or continuing release to the air from this unit would be low for particulate emissions based on the nature of the unit and the collection containers.

Subsurface Gas: Due to the small amounts of material generated, containment, and the nature of the wastes, the potential for past or continuing releases of subsurface gas would be low.

5.5 SWMU 5: Core Butt Collection (VSI Photo 13)

5.5.1 Information Summary [20,21]

Unit Description: The Core Butt collection process involves the removal and disposal of used cores. The used cores (spent sand) are removed from the castings and the sand/cores are processed for reuse. The sand belt cooler is used to cool the used sands, remove core butts (pieces of used cores), and remove fines from the sands. The sand is screened to remove the larger core butts and any metal that was missed by the magnetic separator. An air jet is passed through the material. The fines that are carried off in the air jet are collected in SWMU 6. The sand is returned to a hopper where it available to be used again in the core making process. The core butts are removed via the cooler belt to a two cubic yard steel collection container. This container is then emptied into the Class II Storage Area (SWMU 8). The container is emptied on as as necessary basis [20].

Analysis of the spent sand material indicates that it contains less than EP toxic levels of lead and cadmium. However, the material does display elevated levels of phenols (101.5 mg/kg) [21]. Phenolic compounds are used as binders in the production of cores and molds.

The core butt collection container is located in the southwest portion of the plant. the container is placed on a concrete paved area [20].

Dates of Operation: This unit is currently operating. The date operation commenced is unknown [20].

Wastes Managed: This unit handles spent sand.

Release Controls: The collection container is located on a paved surface.

History of Releases: There is no documented history of release from this unit.

5.5.2 Release Potential

Ground Water/Soils: Since the area surrounding the collection unit is paved, and due to the nature of the material, the potential for past or continuing release to ground water or soils would be low.

Surface Water: The nature of the collection system and the wastes involved would exhibit a low potential for a release to surface water, both past and continuing.

Air: The potential for a past or continuing air release from this unit would be moderate. The core butts, made of spent sand, would contain elevated levels of phenols.

Subsurface Gas: There would be a low potential for past or continuing generation of subsurface gas from this unit. The containers are placed on a paved surface.

5.6 SWMU 6: Belt Cooler Fines Collection (VSI Photo 13)

5.6.1 Information Summary [20,21]

Unit Description: The operation of the sand belt cooler, as mentioned in SWMU 5, is to cool the used sands, extract the core butts, remove the fine material, and return usable sand to the hopper. The fines are collected through the use of a jet of air passed through the material. The fines are blown off and carried to a cyclone where they are removed and deposited into an open, two cubic yard, steel catch box. This box is emptied (on as as needed basis) into the Class II storage area (SWMU 8) [20]. Analysis of spent sand has shown it to contain elevated levels of phenols [21].

The belt cooler operation is located in the southwest portion of the plant. The fines collection system is located in an area that is completely surrounded by concrete pavement [20].

Dates of Operation: The fines collection process is currently active. It is uncertain as to when this operation was initiated [20].

Wastes Managed: The containers are used to collect fines from spent sand.

Release Controls: Containers are placed on a paved surface.

History of Releases: There is no documented histroy of release from this unit.

5.6.2 Release Potential

Ground Water/Soils: Since the area surrounding the collection unit is paved, and due to the nature of the material, the potential for a past or continuing release to ground water or soils would be low.

Surface Water: The nature of the collection system and the waste involved would exhibit a low potential for a release to surface water, past or continuing.

Air: The potential for a past or continuing release to the air from this unit would be low for particulate emissions based on the nature of the unit and the collection containers. Some of the potential phenol contamination would have been driven off these materials in the casting processes and the belt cooler air jetting.

Subsurface Gas: Due to the small amounts of material generated, containment, and the nature of the wastes, the potential for past or continuing releases of subsurface gas would be very low.

5.7 SWMU 7: Muller Fines Collection (VSI Photo 14)

5.7.1 Information Summary [20]

Unit Description: The muller fines collection unit was installed in April of 1987 and is currently active (VSI photo #14). A muller is a type of mixer used to blend sands for core and mold making. This unit is equipped with an air jetting system to remove any fines in the mixing action. The fines consist mainly of silica sand materials. The fines are collected by a cyclone and deposited into a two cubic yard, steel container. This container is emptied periodically into the Class II storage area (SWMU 8) on an as needed basis [20].

The unit is located on the southwest side of the plant facility. The area under and surrounding the collection unit is paved with concrete [20].

Dates of Operation: This unit is currently active. It was brought on line in April, 1987.

Wastes Managed: Fines from sand mixing operations are collected.

Release Controls: The containers are placed on a paved area.

History of Releases: There is no history of releases from this unit.

5.7.2 Release Potential

Ground Water/Soils: The potential for contamination of soils or ground water from a release by this unit, past or continuing, would be low. The containers are placed on a paved surface.

Surface Water: The potential for past or continuing release from this unit is low based on the nature of the material and the collection containers.

Air: Due to the nature of the wast material, a low potential for a past or continuing release to air is exhibited by this unit.

Subsurface Gas: Due to the small amounts of material generated, containment, and the nature of the wastes, the potential for past or continuing releases of subsurface gas would be low.

5.8 SWMU 8: Class II Storage Area (VSI Photo 6)

5.8.1 Information Summary [20,21]

Unit Description: The Class II Storage Area is an area approximately sixty feet long by twenty feet wide in the northeast portion of the south yard area [20]. This area is used to temporarily store all of the Class II wastes generated at TVIS prior to disposal off site. The area is a slight depression with no liner for containment. This temporary storage unit has been used since 1979 [20].

The main waste materials disposed of in this area consist of spent sand, fines from the shot-blast collection (SWMU 4), fines from the sand belt cooler collection (SWMU 6), core butts (SWMU 5), fines from the sand muller collection (SWMU 7), and slag. Slag is generally non-metallic material that floats on the molten metal. This material solidifies into a glass-like solid when it cools. The slag disposed of in the Class II area is granular in nature due to a pressured water cooling process as it is removed from the molten metal. The slag/water granulation process was brought on-line in 1984. Prior to this process, slag was not disposed of in this area [20]. Analysis of the slag shows it to be non-hazardous under EP toxic criteria [21]. The volume of slag produced is approximately 100 cubic yards annually [20].

Currently, about 3,000 cubic yards of Class II material are removed each month and disposed of at an approved landfill operation. Front end loaders and open dump trucks are used to handle and transport the Class II material to a landfill in Fort Worth operated by Waste Management, Inc. The majority of this material is spent, or used, sand [20]. As noted in SWMU 5, used sand contains elevated levels of phenols (101.5 mg/kg) [21].

The wastes are stored directly on the ground in a slight depression. There are no containment features for this unit. The depression itself provides a type of sump for the collection of precipitation and possibly some run-off. This would provide a greater potential for leaching of contaminants into the underlying soils and eventually into shallow ground water. The major contaminant of concern in this unit is the phenols present in the spent sand.

During the VSI, organic vapors at approximately 2.0 ppm above background were detected (Photovac TIP) emanating from the waste material. Readings in the breathing zone were approximately 0.4 ppm above background. The source of the vapors may have been the phenol content in the spent sand [20].

5.8.2 Release Potential

Ground Water/Soils: This unit displays a high potential for the occurence of past and continuing releases to soils and ground water based on the phenol content of the spent sand and lack of containment features.

Surface Water: A low potential for release from this unit exists for past or continuing releases. This potential is based on the pathway to surface water (topographic concerns) and a greater potential for infiltration than run-off.

Air: Based on the organic vapor detections, a high potential for past and continuing air releases exists for this unit.

Subsurface Gas: The nature of the materials placed in this unit, its construction, and organic vapor detections in the air, provide a moderate potential for subsurface gas generation, both past and continuing.

5.9 SWMU 9: Slag Management Area (VSI Photos 3,4)

5.9.1 Information Summary [20,21]

Unit Description: The slag management area refers to a general area inside the TVIS plant where slag was removed and handled from molten metal processing. Since the foundry began operations about 1924, slag generated at the facility had been drawn off the molten mass, poured into 55-gallon drums, and allowed to cool and solidify (VSI photo #3 and #4). The majority of these slag drums were landfilled on site. The current slag removel process, as outlined in SWMU 8, consists of removing the slag from the molten metal and subjecting it to a high pressure water stream. This action causes the slag to cool rapidly and granulate. The water utilized in this process is in a closed system. Additional water is constantly being added due to losses from evaporation. The current process has been utilized since 1984 [20].

The entire operation occurs inside of process buildings. The buildings have concrete floors. The slag collected currently is placed in open, two cubic yard, steel containers. These containers are emptied (on an as needed basis) into the Class II storage area (SWMU 8). Approximately 100 cubic yards of slag are generated annually [20].

Dates of Operation: The area was used for slag drum filling from 1924 to 1984. The current process of granularization by water stream has been in service since 1984.

Wastes Managed: The waste handled in this process is slag. Slag is a non-metal, glass-like substance that floats on the molten metal. It does not display EP toxic characteristics.

Release Controls: The operations of drum filling were conducted in the same area of the facility that the granularization is currently taking place. This area is inside the central process building and the floor is concrete.

History of Releases: There is no documented history of releases from this unit.

5.9.2 Release Potential

Ground Water/Soils: Based on the location of the unit (inside plant building), the nature of the waste material, the amount handled, and containers used, this unit displays a low potential for past or continuing releases to ground water and soils.

Surface Water: All materials are containerized and the area is paved. The pathway for a release to surface water is such that a low potential exists for past and continuing releases.

Air: The nature of the waste and the volume produced exhibit a low potential for any releases, past or continuing, from this unit.

Subsurface Gas: There is a low potential for subsurface gas generation from this unit, past or continuing. This is based on the nature of the waste material, containerization, and the fact that the process is executed inside of a building with concrete floors.

5.10 SWMU 10: Waste Oil Storage Area (VSI Photo 12)

5.10.1 Information Summary [11,9,20]

Unit Description: The waste oil storage area is located on the east side of the maintenance building. This is a paved area and waste oils are stored in 55-gallon and 30-gallon drums and also in a 250-gallon, above ground, storage tank. The date that this area was first used to store waste oils is uncertain [20]. All containers appeared to be in sound condition during the VSI. Most drums in this area were closed or covered (See VSI Photo 12). The waste oils are not highly volatile substances.

The types of waste oils stored in this area are hydraulic oils, used crankcase oil from yard vehicles, lubricating and cutting oils from the machine shop, and other lubricating oils from process machinery. No analyses of these materials was available during the PR or VSI [20].

Currently, all waste oils are being removed from the site to be recycled [11,20]. Some of the waste oils were used in the past for dust suppression in the inventory yards. This procedure was eliminated when TVIS was informed by the TWC that this was a non-acceptable practice. This initial notification took place during an inspection in 1986 [9].

Run-off from this area in mainly controlled through a collection drain associated with the NE run-off sump (SWMU 11). There is no diking around this unit. Should a release from the containers occur, the majority of the materials would flow into the drain. The run-off sump is protected by an oil/water separator [9,20]. However, this system could malfunction or fail, allowing oil containing run-off to enter the creek via the sump outfall in suspension or carry-over.

Dates of Operation: The intitial date of service for this area is unknown. The unit is currently active.

Wastes Managed: The types of waste oils stored in this area are hydraulic oils, used crankcase oil from yard vehicles, lubricating and cutting oils from the machine shop, and other lubricating oils from process machinery.

Release Controls: The area is paved. There is no diking or berming. A run-off collection drain would accept any mishandled materials. This drain leads to the NE Run-off Sump (SWMU 11) which has an oil/water separator. All containers appeared in sound condition.

History of Releases: There is no documented history of releases from this unit.

5.10.2 Release Potential

Ground Water/Soils: A low potential exists for past and continuing releases from this unit. Mishandling (spills) of waste oils could occur which would provide an avenue for release. The area is paved, but there is no diking to control spillage should it occur.

Surface Water: A moderate potential for a past or continuing release to surface water exists for this unit. Discharge from the unit could enter surface water via the NE Run-off Sump (SWMU 11).

Air: Due to the containment, and the type of material stored, the potential for a release to air from this unit in the past or on a continuing basis is low.

Subsurface Gas: Since the area is paved, the materials are containerized, and the materials are only temporarily stored, this unit would have a low potential for the generation of subsurface gas.

5.11 SWMU 11: NE Run-off Sump (VSI Photos 8,9,10)

5.11.1 Information Summary [9,20]

Unit Description: The northeast (NE) run-off sump is a collection sump for surface water run-off. It is located in the northeast portion of the facility. The sump is fed by storm-type drains located in the northern half of the plant area [9,20].

Operations at the facility, specifically the machine shop and maintenance shops, could produce situations of oil discharge to the ground surface. The bituminous coating process could also contribute to an "oil" fraction in surface run-off. These areas are paved and sloped to direct surface run-off into the drain collection system leading to the sump [20].

The sump was constructed in 1980 of re-enforced concrete. The sump is approximately 3 feet by 3 feet by 6 feet deep (VSI photo #10). The VSI indicated that the sump was in sound condition and did not show signs of structural defect. The base of the sump is equipped with an oil/water separator. The separator utilizes an electric powered sump pump to remove the lighter than water fraction of the run-off. The water that remains is allowed to flow off the site through an underground culvert to an outfall located east of the facility in the Fort Worth Botanic Gardens (VSI photos #8 and #9). During the VSI a heavy sediment load was observed at the base of the outfall into the creek [20].

This outfall also services other surface water collection drains. The City of Fort Worth operates a maintenance facility that ties into this outfall. Oil has been noted in the outfall effluent on at least two occasions. One instance, in 1985, was traced to the city's maintenance operation. Another instance, in 1981 or 1982, alleged that TVIS was the source; however, no information on the other connections was available at that time [20].

Organic vapor concentration readings with a Photovac TIP taken during the VSI showed levels 2.0 ppm above background in the interior of the sump. Readings in the breathing zone around the sump area were at 1.0 ppm above background. The sump is also located near an underground storage tank that contains naphtha [AOC A]. Some of these readings could be emanating from tank ventilation [20].

Dates of Operation: The unit has been in place since 1980. It is currently active.

Wastes Managed: This unit handles run-off water that is collected from the northeast portion of the site. This run-off may contain amounts of oil and other materials carried into the collection system from facility processes.

Release Controls: There is an oil/water separator in this sump designed to remove any "lighter than water" fraction of the run-off.

History of Releases: There are indications of at least two previous releases potentially from this unit. Oil was observed at the outfall to the creek on two occasions. The first alleged incident occurred circa 1982. The second incident allegedly was traced to the City of Fort Worth Maintenance Facility which is also connected to this outfall. The second incident took place in 1985 [20].

5.11.2 Release Potential

Ground Water/Soils: The potential for past or continuing releases to ground water or soil from this unit is low based on the nature of the unit.

Surface Water: There have been occasions of "oily substances" being released into the creek. Due to the previous alleged releases, the obvious sedimentation, a high potential for past and continuing releases to surface water is associated with this unit.

Air: Based on the organic vapor detections and the probability of fugitive spent sands (phenols) entering the sump, a high potential for air releases would exist for this unit, both past and continuing.

Subsurface Gas: A moderate potential for the past or continuing generation of subsurface gas exists for this unit based on organic vapor detections and unit design.

5.12 SWMU 12: Sump Storage Tank (VSI Photos 10, 15)

5.12.1 Information Summary [20]

The sump storage tank is the receptor vessel of the material removed by the oil/water separator in the NE run-off sump (SWMU 11). This storage tank is a truck mounted vessel with an approximated capacity of 2,000 gallons. Materials are pumped directly from the sump into the tank via a flexible hose. The materials collected in the tank are removed from the site by an oil recycler. Collection of the material from the oil/water separator began in 1980 [20].

If the material was to leak or spill, the slope of the area would return the material back into the sump. Some signs of spillage were present on the sides of the tank during the VSI. If the tank were to suffer complete integrity loss or release a large quantity of material, the sump would not be able to handle the volume or remove it to another storage vessel before a release to the outfall from the sump would occur.

5.12.2 Release Potential

Ground Water/Soils: This unit displays a low potential for a past or continuing release to ground water or soils due to its elevated nature and proximity to the sump itself.

Surface Water: This unit would have a moderate potential for past or continuing releases to surface water. Tank failure would overload the sump.

Air: The tank is open at the manway on top of the tank. This is where the output line from the sump enters. This would be the only opening from which an air release could occur. Based on the indications of the type of materials collected, a moderate potential for a past or continuing release to air exists.

Subsurface Gas: Due to the elevated nature of the unit, and the pavement beneath it, this unit displays a low potential for subsurface gas generation, both past or continuing.

5.13 SWMU 13: Slag Drum Wall/Sand Fill (VSI Photos 3,4,7)

5.13.1 Information Summary [4,5,8,19,20,21]

Unit Description: The Slag Drum Wall/Sand Fill refers to the those areas that have been landfilled on site utilizing the slag filled drums and spent sand. As indicated on Figures B and C, this covers a substantial area of the site. The depth of the filling is as much as thirty feet in some areas [4,5,8,20]

The slag-filled drums are the direct result of the foundry operations. For most of the past sixty years, slag has been drummed and buried on site (VSI photos 3, 4, 7). The exposed walls on most of the eastern portions of the site attest to the potential amount of material. The section of property in the southwest also shows an exposed drum wall that is at least twenty feet high in places [20]. The slag itself does not show any EP toxic characteristics. Levels of phenols in the analysis are also low (0.6 mg/kg) [21].

The spent sand that has been used as backfill around the placed slag drums presents a potential source for phenol contamination in both soils and ground water. Analysis of spent sand has shown levels of phenols at 101.5 mg/kg [21]. Phenolic compounds are used in the foundry process as binders in the mold and core making operations. These may not have been the same type of binders used years ago [20].

Much of the filling was done on an as needed basis. The slag and sand would build up on the site; therefore, another lift would be added to create more yard space. The area that surrounded the former Furnace Dust Disposal Pit (SWMU 1) was created specifically for that purpose with the drum wall technique. This area has now been excavated and backfilled with the spent sand, as indicated in Section 5.1.

Dates of Operation: No exact dates are available. Disposal of slag and sand on the site probably began in 1924. Sand disposal on site ceased in 1979 with the use of the Class II storage Area (SWMU 8), except for the backfilling of SWMU 1 completed in 1986. Slag drums were still stockpiled on site until 1984 when the slag granulation operation began. Several hundred slag-filled drums still remain on site, above ground [20].

Wastes Managed: Wastes handled include mainly slag-filled drums and spent sand.

Release Controls: There are no release controls.

History of Releases: There is no specific documented release from this unit. However, monitoring wells for the disposal pit (SWMU 1) indicate that ground water contains elevated levels of phenols [19]. These could be associated with this general site filling.

5.13.2 Release Potential

Ground Water/Soils: A high potential exists for past or continuing releases to ground water and soils from this unit based on the materials disposed and the lack of containment features.

Surface Water: A moderate potential exists for past or continuing releases to ground water or soils due to the manner in which these materials were disposed and the proximity of the creek to the "walls".

Air: Due to the age of the disposal practices, a low potential for a continuing release to the air exists for this unit. A past release to air would have had a moderate potential based on the waste materials and disposal methods.

Subsurface Gas: The amount of material disposed, and specifically, any sand containing phenols, would cause this unit to exhibit a moderate potential for the generation of subsurface gas, past and continuing.

5.14 SWMU 14: Grindings Disposal

5.14.1 Information Summary [20]

Unit Description: The machining operations associated with foundry processes produce significant amounts of waste filings, cuttings, and scraps. These materials were also drummed and, in some instances, filled on the property. Most of this filling activity took place on the northeast portion of the property near the machine shops. The waste material was metallic in nature. No analyses of these materials are available. The estimated extent of the machining/grindings disposal is indicated on Figure C. There are no known dates for this filling activity [20].

Dates of Operation: Unknown, not a currently active process.

Wastes Managed: Grindings, filings, cuttings, and other metallic material wastes generated from the machine shop activities.

Release Controls: There are no release controls.

History of Releases: There is no documented history of releases from this unit.

5.14.2 Release Potential

Ground Water/Soils: The potential for a past or continuing release from this unit is low based on the type of waste material.

Surface Water: The potential for a past or continuing release from this unit is low due to the nature of the waste materials.

Air: The potential for a past or continuing release from this unit is low based on the waste materials.

Subsurface Gas: The potential for a past or continuing release from this unit is low based on the nature of the waste materials.

5.15 SWMU 15: Dipping Area

5.15.1 Information Summary [20,24]

Unit Description: The Dipping Area refers to the outside bituminous coating operations area in the north portion of the facility. Here, the large castings are dipped in a vat, or open tank, of a bituminous coating solution. This coating is an industry-wide used substance for the coating of water mains and fittings. The coating is approved by the American Water Works Association for use in public and private water systems. The coating is known as 7-C-77 Cutback or Air Blown Asphalt Cutback [24]. It is a member of the petroleum hydrocarbon family. There are two hazardous components associated with this material, asphalt and naphtha [20,24].

The castings are lowered into the tank on a chain and then removed and brought to the inventory yard or loaded on a truck for shipment. There are no preventative measures taken to avoid dripping of the coating outside of the tank, besides the operators discretion. There is no drip pan or designated drip area [20].

Dates of Operation: The process is currently active. The dates of initiation of this activity is unknown.

Wastes Managed: The product contains naphtha and asphalt.

Release Controls: There are no release controls.

History of Releases: There is no documented history of releases. However, practices observed during the VSI indicated that excess coating material is allowed to drip onto unprotected surfaces.

5.15.2 Release Potential

Ground Water/Soils: A moderate potential for a past or continuing release to ground water or soils exists due to the uncontrolled excess coating.

Surface Water: A low potential exists for a past or continuing release to surface water due to surface run-off being channeled towards the NE Run-off Sump (SWMU 11).

Air: The volatile nature of naphtha would exhibit a moderate potential for a release to air, past and continuing.

Subsurface Gas: The past and continuing potential for the generation of subsurface gas would be low based on the small amount of material exposed to the ground.

5.16 SWMU 16: UST Gasoline Area (VSI Photo 1)

5.16.1 Information Summary [20]

Unit Description: The UST (underground storage tank) Gasoline Area is located near the main office on the south end of the plant. This tank has a volume of 1,000 gallons. This tank was installed over thirty years ago according to TVIS officials. The nature of construction and installation are unknown. The tank is currently in use. Stained soils/gravel were observed during the VSI. These stains were assumed to be gasoline and diesel fuel from spillage and leakage from equipment filling operations [20].

Dates of Operation: The initial date of service of the tank is unknown. It is alleged to be over thirty years old.

Wastes Managed: The tank is use to store gasoline.

Release Controls: There are no known release controls.

History of Releases: There is visual evidence that the surface soils have been contaminated by product spills or mishandling.

5.16.2 Release Potential

Ground Water/Soils: There is a high potential for a past and continuing release to ground water and soils from this unit. This is based on the age of the tank and the observed stained soils.

Surface Water: The potential for past and continuing surface water releases from this area is moderate. The majority of the material is underground. Stained surface soils do suggest surface water run-off potential.

Air: The potential for a past or continuing release to air from this unit would be moderate. There is a possibility of volatilization of the spilled material.

Subsurface Gas: There is a high potential for the generation of subsurface gas, past and continuing, based on the nature of the material.

5.17 SWMU 17: UST Diesel Area (VSI Photo 1)

5.17.1 Information Summary [20]

Unit Description: The UST (underground storage tank) Diesel Area is located in close proximity to UST Gasoline Area (SWMU 16). The details of this tank installation are unknown. According to TVIS officials, this tank was probably installed about 25 years ago. The tank was said to have a volume of 2,500 gallons. Stained surface soils were observed as noted in SWMU 16, the UST Gasoline Area.

Dates of Operation: Initial date of service is assumed to circa 1962.

Wastes Managed: Diesel fuel is contained in the tank.

Release Controls: There are no known release controls.

History of Releases: There is visual evidence that the surface soils have been contaminated by product spills or mishandling.

5.17.2 Release Potential

Ground Water/Soils: There is a high potential for a past and continuing release to ground water and soils from this unit. This is based on the age of the tank and the observed stained soils.

Surface Water: The past and contniuing potential for surface water releases from this area is moderate. The majority of the material is underground. Stained surface soils do suggest surface water run-off potential.

Air: The potential for a past or continuing release to air from this unit would be moderate. There is a possibility of volatilization of the spilled material.

Subsurface Gas: There is a moderate potential for the generation of subsurface gas, past and continuing, based on the nature of the material.

6.0 AREA OF CONCERN

An additional area on the facility property has been identified as a potential source of releases to the environment of potentially hazardous constituents. This area was not included in the previous section because it does not fit into the "generic" definition of a SWMU. It has been labeled as an Area of Concern (AOC). This section of the PR/VSI report identifies the area of concern observed during the VSI.

6.1 UST Naphtha (VSI Photo 10)

The UST (underground storage tank) Naphtha is located near the NE Run-off Sump (SWMU 11) in the northern portion of the facility. This tank was installed in 1980. It has a capacity of 5,000 gallons. The tank is currently in use. There is no known system of leak detection. There is a concrete pad located over the tank. The area is also protected from vehicle traffic by a steel pipe barrier. The tank was installed within an area that has been filled and reinforced with the slag drum, or grindings drum, walls. The wall is just a few feet away from the protective tank pad [20].

7.0 CONCLUSIONS AND RECOMMENDATIONS

This section of the PR/VSI report provides suggested further actions and their reasons for each of the Solid Waste Management Units (SWMUs). Suggested action and reasons are also provided for the Area of Concern (AOC).

7.1 SWMU 1: Furnace Dust Disposal Pit

Suggested Further Action: No further action at this time. When data has been compiled from closure ground water monitoring, it may be necessary to re-evaluate the SWMU.

Reasons: The Furnace Dust Disposal Pit is currently in the process of clean closure. All wastes have been removed, the excavation backfilled, and clay capped. The first year of ground water monitoring has not been submitted at this point. There were indications of elevated levels of phenols in the ground water. This was not to be considered as part of the closure process, according to the TWC in June, 1987.

7.2 SWMU 2: Baghouse

Suggested Further Action: No Further actions need be taken at this time. The facility should periodically inspect the unit in order to prevent mechanical failures and fugitive emissions.

Reasons: The Baghouse has a good operational record and there were no visible signs of fugitive emissions during the VSI.

7.3 SWMU 3: Baghouse Dust Container

Suggested Further Action: No Further actions need be taken at this time. Facility personnel should inspect the containers for leaks and proper connections to the baghouse in order to prevent fugitive emissions.

Reasons: The containers are lined with plastic and are completely enclosed. They are positioned on a concrete pad and all connections to the baghouse are engineered as to be out of any traffic areas.

7.4 SWMU 4: Shot-blast Fines Collection

Suggested Further Action: No further action at this time. Facility should periodically inspect operating unit in order to insure proper function.

Reasons: The waste material collected in the shot-blast operation is a solid (fines). The source of these fines is mainly spent sand. The material is classified as non-hazardous. However, the presence of phenols in spent sand may cause some concern.

7.5 SWMU 5: Core Butt Collection

Suggested Further Action: No further action at this time. Facility should periodically inspect operating unit to insure proper function.

Reasons: The Core Butt Collection is performed in a paved area and steel containers are utilized. This is a small quantity collection system for a non-EP toxic waste.

7.6 SWMU 6: Belt Cooler Fines Collection

Suggested Further Action: No further action at this time. facility should periodically inspect operating unit to insure proper function.

Reasons: The Belt Cooler Fines Collection is performed in a paved area and steel containers are utilized. This is a small quantity collection system for a non-EP toxic waste.

7.7 SWMU 7: Muller Fines Collection

Suggested Further Action: No further action at this time. Facility should periodically inspect unit to insure proper function.

Reasons: The Muller Fines Collection is performed in a paved area and steel containers are utilized. This is a small quantity collection system for a non-EP toxic waste.

7.8 SWMU 8: Class II Storage Area

Suggested Further Action: The temporary storage of the Class II waste directly on the ground should be discontinued. A concrete paved, diked area should be constructed to handle this material. This area should be constructed away from the immediate worker area to reduce the potential of exposure to organic vapors (phenols in sand).

Due to the extensive filling of the site with this type of material in the past, extensive ground water or soil sampling of the area does not appear justified. However, samples to characterize the material should be collected.

Reasons: The wastes are stored directly on the ground in a slight depression. There are no containment features for this unit. The depression itself provides a type of sump for the collection of precipitation and possibly some run-off. This would provide a greater potential for leaching of contaminants into the underlying soils and eventually into shallow ground water. The major contaminant of concern in this unit is the phenols present in the spent sand.

During the VSI, organic vapors at approximately 2.0 ppm above background were detected (Photovac TIP) emanating from the waste material. Readings in the breathing zone were approximately 0.4 ppm above background. The source of the vapors may have been the phenol content in the spent sand.

7.9 SWMU 9: Slag Management Area

Suggested Further Action: No further action at this time.

Reasons: The Slag Management Area is located inside of the facility buildings. The floors are concrete paved. The current collection containers are only for small quantities of the non-EP toxic waste.

7.10 <u>SWMU 10: Waste Oil Storage Area</u>

<u>Suggested Further Action</u>: Containers should be inspected regularly for leaks. Containers should be clearly marked as to content. All containers should be kept closed or covered during periods of inactivity. The area should be clearly designated. Spill control materials (absorbents, pigs) should be readily available.

<u>Reasons</u>: Run-off from this area is diverted to the NE Run-off Sump (SWMU 11). There would be a potential for a major release to reach surface water. Observations during the VSI indicated that the area could utilize better organizational practices.

7.11 <u>SWMU 11: NE Run-off Sump</u>

<u>Suggested Further Action</u>: Samples of the sediments in the sump should be collected in order to verify the type of material entering the sump. These samples should be used in conjunction with samples collected at the outfall to determine if hazardous constituents are entering the nearby surface water. Based on the results of the sample analysis, alternative run-off collection and treatment controls may be necessary, along with additional sampling, to identify the extent of contaminant migration. This effort should also include investigation of the other users of this surface water outfall.

<u>Reasons</u>: The unit has been in place since 1980. There have been occasions of "oily substances" being released into the creek. These, however, have not been documented as to the exact source. A heavy sediment load has entered the stream at the outfall.

Organic vapor concentration readings with a Photovac TIP taken during the VSI showed levels 2.0 ppm above background in the interior of the sump. Readings in the breathing zone around the sump area were at 1.0 ppm above background. The sump is also located near an underground storage tank that contains naphtha. Some of these readings could be emanating from tank ventilation.

7.12 <u>SWMU 12: Sump Storage Tank</u>

<u>Suggested Further Action</u>: A proper form of secondary containment for the tank should be provided. Although it is a vehicle mounted tank, it is used in a stationary fashion.

<u>Reasons</u>: The Sump Storage Tank is mounted on a truck chassis. The tank is positioned in such a manner that any spillage would return to the sump. However, in the event of a major discharge from this tank, the sump capacity would be exceeded and the result would be a discharge to the creek.

7.13 <u>SWMU 13: Slag Drum Wall/Sand Fill</u>

<u>Suggested Further Action</u>: Installation of ground water monitoring wells in the adjacent, unfilled property to the east (Fort Worth Botanic Gardens, downgradient). This would provide information as to whether contaminant migration is occurring in the shallow ground water.

<u>Reasons</u>: Some attempt should be made to determine if the historical disposal practices over the the past sixty years have affected offsite areas. Much of the surrounding area has been highly industrialized and separation of sources of potential offsite contaminant migration may be difficult. Probably over half of the surface area has been affected by these practices and the depth of filling is allegedly up to 30 feet. Any borings taken on site would mainly define the waste materials and not their effects on the surrounding environment.

7.14 <u>SWMU 14: Grindings Disposal</u>

<u>Suggested Further Action</u>: The assessment of this disposal practice could be achieved in combination with the efforts for the Slag Drum Wall/Sand Fill (SWMU 13).

<u>Reasons</u>: The same logic applies to this area as noted in the Slag Drum Wall/Sand Fill (SWMU 13); however, the extent of the area filled is allegedly much less. The waste materials also differ in composition.

7.15 SWMU 15: Dipping Area

Suggested Further Action: Better operational practices should be incorporated by the facility such as some form of drying area and drip collection for the outside dip tank.

Reasons: The material is considered harmless once it has dried. It does pose a potential source of contamination in its liquid state based on its contents of naphtha and asphalt. Observations during the VSI indicated that some of the excess coating was allowed to drip outside of the dip tank.

7.16 SWMU 16: UST Gasoline Area

Suggested Further Action: Information on this tank should be provided to the UST program office in Region VI to determine the need for further action. The UST program should also address the issue of contaminated soils in the area.

Reasons: This underground gasoline tank is allegedly 30 years old. Some action should be initiated based on the approximate age of this tank and the onset of the new underground storage tank regulations.

7.17 SWMU 17: UST Diesel Area

Suggested Further Action: Information on this tank should be provided to the UST program office in Region VI to determine the need for further action. The UST program should also address the issue of contaminated soils in the area.

Reasons: This underground diesel fuel tank is allegedly 25 years old. Some action should be initiated based on the approximate age of this tank and the onset of the new underground storage tank regulations.

Area of Concern

7.18 AOC A: UST Naphtha

Suggested Further Action: Information on this tank should be provided to the UST program office in Region VI to determine the need for further action.

Reasons: This tank was installed in 1980. The new underground storage tank regulations will apply. There have been no documented spills or releases from this area. A surface spill would readily flow across the pad and into the NE Run-off Sump (SWMU 11). This would present a potential pathway for releases to surface water. The tank itself is situated within a filled area.

8.0 REFERENCES

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18. TDWR, Interoffice correspondence from C. Swan to G. Green, March 11, 1982. 1 page.

19. TWC, 1986, SWCMIR TVIS, December 9, 1986, 4 pages.

20. Visual Site Inspection, July 21 and 22, 1987.

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23. Lyman, W. T., W. F. Reehl, D. H. Rosenblatt, Handbook of Chemical Property Estimation Methods, Environmental Behavior of Organic Compounds , McGraw Hill, 1982, Pages 15.12, 15.16.

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* Texas Department of Water Resources (TDWR) changed to the Texas Water Commission (TWC) on September 4, 1985.

APPENDIX A

VSI PHOTOGRAPHIC LOG

VSI Photo #1

Date: 7/21/87
Time: 1:15 pm

Direction: Northwest

Description: Location of underground fuel storage tanks (1-gasoline, 1-diesel)

VSI Photo #2

Date: 7/21/87
Time: 1:20 pm

Direction: Northeast

Description: Site of former furnace dust disposal pit (SWMU 1), monitoring wells in background.

VSI Photo #3

Date: 7/21/87
Time: 1:21 pm

Direction: East

Description: Slag-filled drum

VSI Photo #4

)ate: 7/21/87
'ime: 1:24 pm

)irection: Northwest

)escription: Edge of the former disposal pit (SWMU 1), with monitoring well and slag-filled barrels.

VSI Photo #5

Date: 7/21/87
Time: 1:27 pm

Direction: East, southeast

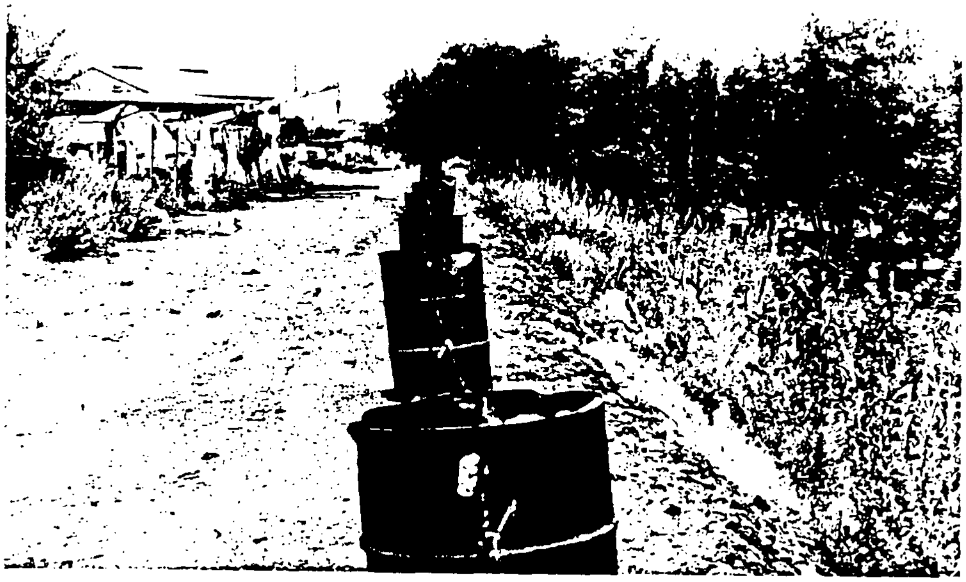
Description: From former disposal pit (SWMU 1) looking to edge of wall (drums in background). Tops of buried drums visible in foreground behind monitoring well protective structure.

VSI Photo #6

Date: 7/21/87
Time: 1:30 pm

Direction: Northwest

Description: Class II Storage Area (SWMU 8). Black material is mainly spent sand with some fines and granulated slag mixed in. End loader (in background) is used to load material onto dump trucks for transport to landfill.

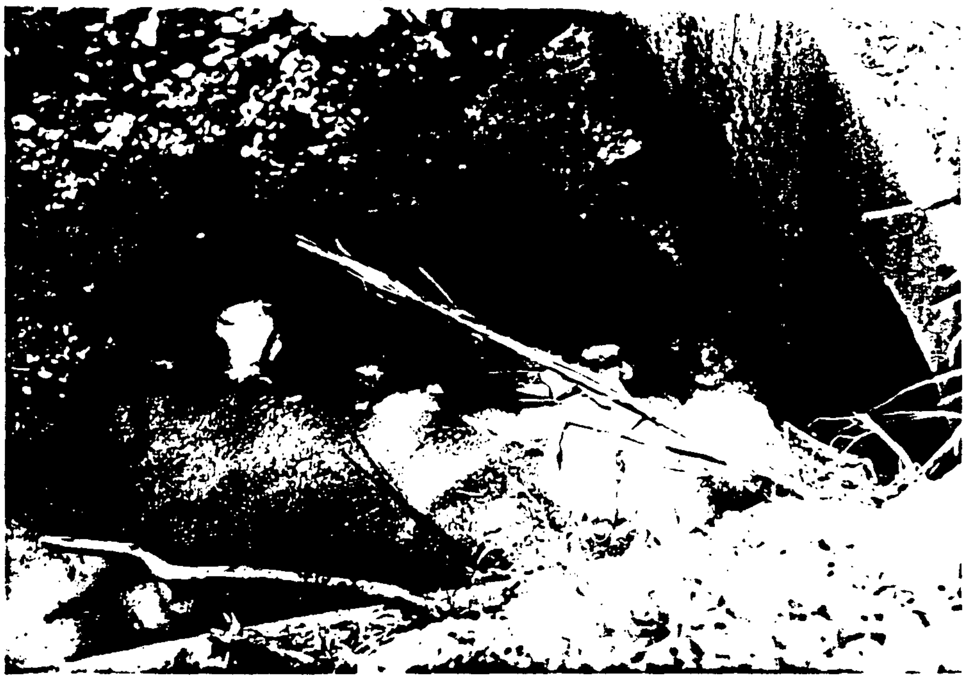


VSI Photo #7

Date: 7/21/87
Time: 1:34 pm

Direction: North

Description: Edge of slag drum wall where newer lift has been added. Maintenance shops are located to the west of the fence. Low area to the east is the Fort Worth Botanic Garden property.



VSI Photo #8

Date: 7/21/87
Time: 1:48 pm

Direction: Southwest

Description: Discharge pipe, outfall, to creek on Botanic Gardens property. Outfall is form NE run-off sump (SWMU 11) and other connected drains.

VSI Photo #9

Date: 7/21/87
Time: 1:50 pm

Direction: South, southwest

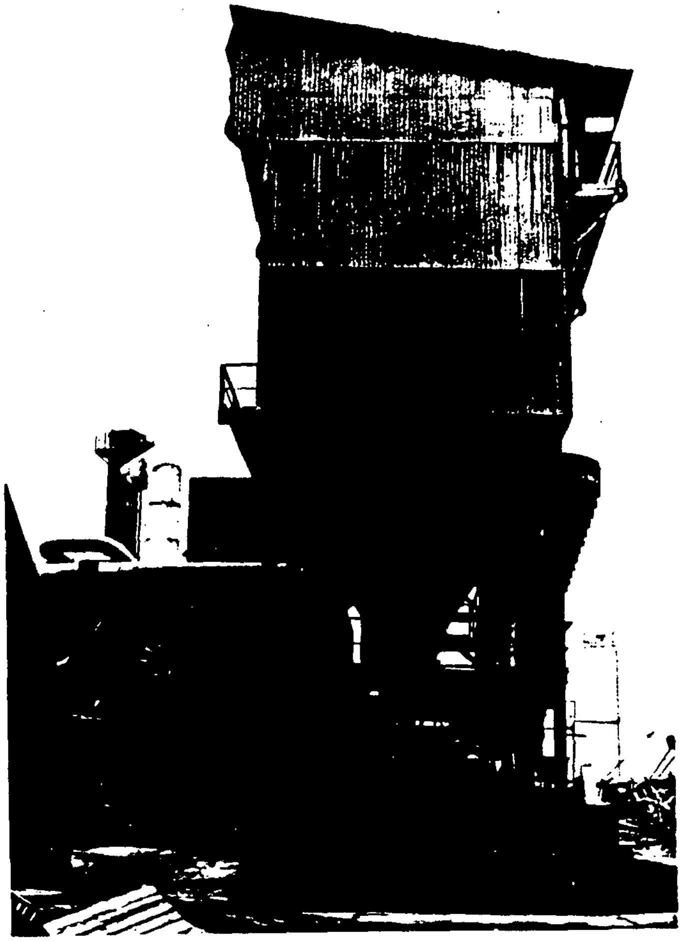
Description: Discharge pipe, outfall, to creek on Botanic Gardens property. Outfall is form NE run-off sump (SWMU 11) and other connected drains.

VSI Photo #10

Date: 7/21/87
Time: 1:53 pm

Direction: Northeast

Description: NE Run-off sump (SWMU 11) and truck mounted sump storage tank (SWMU 12). Sump is located within grated/caged area near truck. A 5,000 gallon underground storage tank used for naptha is located near the sump (within protective guardrails).



SI Photo #11

ate: 7/21/87
ime: 2:00 pm

irection: South

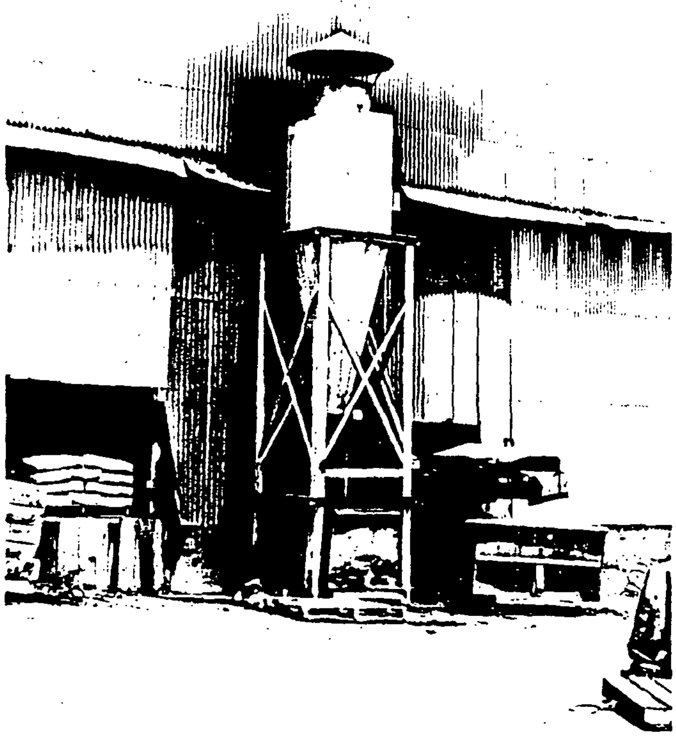
escription: End view of baghouse (SWMU 2) showing proximity of roll-off collection container (SWMU 3).

VSI Photo #12

Date: 7/21/87
Time: 2:08 pm

Direction: North

Description: Waste oil storage area (SWMU 10) located east of maintenance building. Some drums represent new oil not used oil. Dark tank in background is for waste oil.

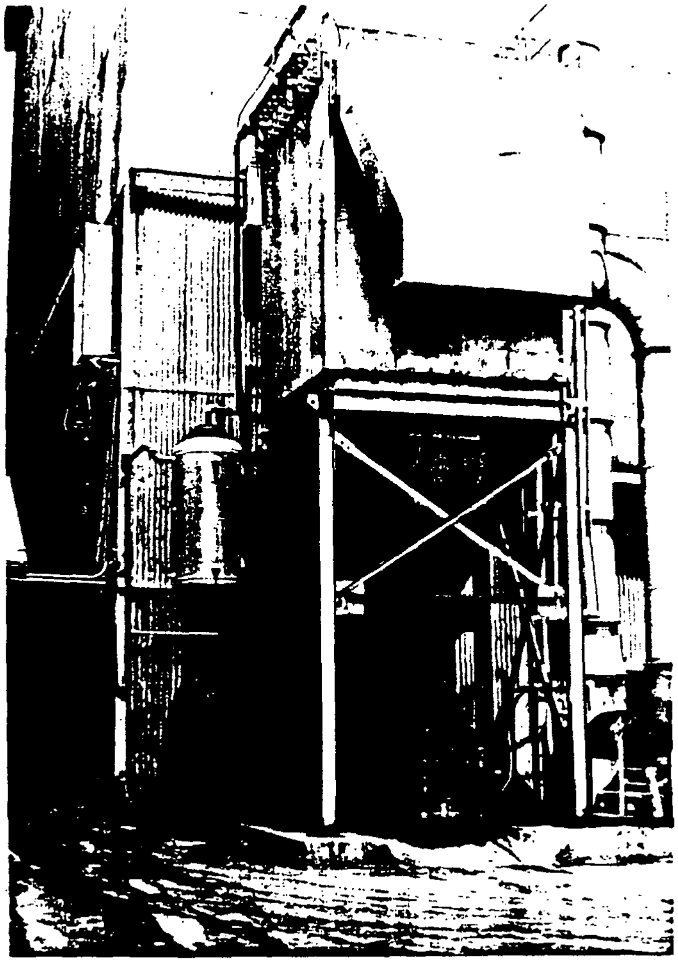


VSI Photo #13

Date: 7/21/87
Time: 2:15 pm

Direction: Northeast

Description: Core butt collection container (SWMU 5) stationed below delivery belt. Belt cooler fines collection container (SWMU 6) to the right of SWMU 5 beneath cyclone.



VSI Photo #14

Date: 7/21/87
Time: 2:20 pm

Direction: Northeast

Description: Muller fines collection unit (SWMU 7) container located under cyclone collector. This is a sand mixing operation where the fines are blown out and collected.

VSI Photo #15

Date: 7/22/87
Time: 2:45 pm

Direction: Northea

Description: Side view of Sump storage tank (SWMU 12) located near NE run-off sump (SWMU 11).

APPENDIX B

VSI LOG

Field Notebook

For

Trinity Valley Iron & Steel Co

Fort Worth, TX

RCRA Facility Assessment

EPA Contract: 68-01-~~7038~~ 7374 (initials)

Work Assignment: R26-01-18

TXD980626048

7/20/87

TVIS is a grey iron foundry that produces water main fittings. A foundry has occupied this site since ≈1924.

Questions for TVIS

1) SWMU # 1 Baghouse dust disposal Pit
A. years of operation
B Total volume of material removed
C Date of closure approval -
D method of dust/ash disposal before pit
E locations, dates of other disposals

2) Baghouse
A) years of operation
B) Specifications on unit
1. Mfg. /specs
2 Size, capacity
C) Approximate annual production of ash
D) type of foundation (concrete pad?) ; roll off box pad
E) Size of roll off bay
F) Description of conveyor system

3) Sand
A) Types of binders used, quantities [phenols, Formaldehyde, Polymeric MDI, Type diisocyanate, aromatic Hydrocarbon, pyridine derivative,
B) Method and area of mixing
C) Method of treatment and storage for used sand

[signature]
7/20/87

3) D. Disposal for spent sand
E. Years of onsite sand disposal, methods, other disposal locations and dates and ≈ amounts

4) Waste Oils
A Types of waste oils generated
1. Sources
2 Amounts
B Collection method(s) areas, dates
C Storage method(s), areas, dates
D Disposal method(s) areas, dates

5) Slag Drum Filling & Cooling
A. Size + area description, location
B. Years of drum filling
C Other disposal of slag onsite/offsite
1. Locations
2. methods
3. dates
D Annual approximate production of slag

6) Production
A. Disposal of fines from grinding
B. Solutions for Dipping
1. Types, characteristics
2. Treatment, storage, disposal of spent solutions
3. Containment in dipping and drying

David [illegible]
7/20/87

tcus

7) General

A. Construction of culvert in + near disposal site

1. year constructed

2. Material and design

B. Filling of site

i. years of filling.

2. materials landfilled

C Years of Slurry drum wall construction

D. Sump/catch basin in NE corner of facility

1. Design + dimensions

2 Years of operation

3 Fate of collected materials

E Basic process flow diagram indicating all waste streams generated and waste management practices -

8) Info on oil spills

2)

David [illegible]
7/20/87

4

7/21/87 VSI

Attendees: David Curnock
Claude F. Mays
Michael Widick
Michael ~~Charles~~ Sane Montoya
Michael Wright Com Mgr

9:00AM
Location: TUIS 3400 Bryce, Mike Widick's office, Ft. Worth, TX

Weather: 85°F sunny

Hospital: –

Permit # Application TDWR - 31092
(land disposal unit)

DMC

9:15

Q. 1A. yrs of operation SWMU #1
(See P. 6)
- June 1986 considered closed - all material removed, backfilled and clay capped.

1B.

1C Closure not approved as of yet.

1D Baghouse was constructed and Pit was started when baghouse went on line.

~~1D. D~~ Done 1E - not applicable see 1D

→ E Total volume of material removed 12,463380 pounds

2 A) yrs of operation of baghouse
(See P. 6)

9:40 - List of Questions given to M. Widick TVIS.

2E) Rolloff box for dust collection $30 yd^3$ closed top.
2D) box is positioned on concrete pad. Curbed (18") on south side
2 F) Conveyor is screw conveyor. collects from bottom of all hoppers (8) and then out to the dumpster. It is enclosed.

DCK

1A. Dust has been collected since last ¼ of 1977
All material removed by 10/85.
Clay cap installed 6/86.
In 10/86 – began 1 yr closure GW monitoring.

2A Baghouse came online in 1977

2B Baghouse specs. HARSELL MFG.

8 sections – 120 bags/section

conveyor is 36 feet long. screw 1 foot diameter.
51'7" x 20'1⅝" x 60'10"

SANDS.
Binder – bentonite
method of mixing – Beardsley Piper B+P 80A
B+P 100B
"muller" is a method of mixing
area is located inside building

Airset cores + molds.
phenolic urethane – binder liquid
(screw type mixer)

DMW

Shell cores
heat set phenolic binders - flake resin

Phenolic binder is mixed in a trough that has a screw type conveyor.

Heat set mixes are done in a BP 48 muller. (Flakes)

Sand is recycled but with the addition of new sand to keep quality of sand. The sand is hauled away because of volume.

Currently Spent sand is taken as Class II to Waste Management site in Ft. Worth. ≈3K yd^3/month.
(≈1984 - present)
1979-≈84 to unlicensed site

SAID Years of onsite sand disposal ≈1924 - ~~1985~~ DMC 1979 (except for backfill.)

Sand that is "stored" for recycle is made and is moved by conveyor to a hopper to start over in the process

DMC

Waste oils

spent engine oils, lubricants – cutting oils
hydraulic oil,

Disposed through a recycler. Pick up.

Run off collection system NE sump
pumped into a tank on a truck
approximately 2000 gallon

Collects surface water / storm

The stormdrain also connects with the city of Ft worth maintenance yard.

City also had a tar leak from asphalt plant in the area ≈ west of the plant

Oil water separator in sump.

This material also goes to the recycler.

≈ 6 months to 1 year ago this was used as dust suppressant. State stopped this.
currently collected and recycled.

Other containers of spent oils are in maintenance yard
55 gallon drums
~ 150-200 gallon tank
all are on concrete pads + indoors ? owc

Run off ≈ dependent on rainfall for amounts

DMW

Runoff sump - concrete reinforced pit.
dimension - (during VSI)

- Didn't know date of construction (over 7) seven years)

- What isn't collected in separator is released to city storm drainage.
No monitoring required (chemical) for outfall

Current system -
slag water system - slag is moved off the top of the cupola and is fed into a water bath and is granulated. It is then hauled to a Class II landfill (Ft Worth Waste Management)
1984 Slag granulating system came on line

Previous to 1984 - barrel filling was done not just for the wall. Barrels were also placed in the fill area general, No free slag.

No records of exact nature for documentation of always using barrels.

barrels were filled inside plant

DWC

Some slag may have been used in roadway construction – (hear say)

Volume of slag currently ≈ $100 yd^3$

~~Foun ca~~ Dmc
large scraps, cuttings are collected in hoppers to be recharged to the furnace

Grindings from blasting are (shot-blast) are collected in vacuum/dust collectors. This material is collected in hoppers sent out as Class II non-haz.

Dipping
"bituminous coating." AWWA approved for potable use.
used on water main fittings.
– air agitated system – not drained or any sludges produced. More is added as it is used.

- ~~air dinged~~ Dmc inside dipping area
air dried on a conveyor. No controls for runoff – (Not a concern because it is used in all water systems).

DWV

culvert running from west to east on south end of site
was put in by city

(assumed to be concrete)

Slag fill / sand fill
put some additional dunes left on hand
into an area behind maintenance

Water usage is closed system.

slag water
cupola cooling water
furnace cooling water.

No blow down.
only water added to system

All uses are city water.

DMC

1) oil spill - maintenance facility from St. well
date unknown - ≈5 years ago

2) oil spill - traced to Ft Worth maintenance
facility ≈1985

Slag drum wall - drums filled with slag

~~≈120K yd³ year baghouse dust~~ - AMC
720 yd³ year baghouse dust

Rubber
Phenols - drum stored outside
Flakes stored in boxes inside

DW

Visual tour

- underground storage tanks
  1) gas 1) diesel.
  near plant office

- Pit. area.
  filled above grade no ponding
  flow is towards site, away from wall.
  clay cap

  ≈ 200 slags just sitting around.

Drain wall in pit area built later than
the other walls. (≈ 10-15 ago)

Built to support Pit disposal area

Spent sand stored in "pit" depression until
loaded for delivery to landfill ≈ 60 x 20 area

Additional barrels added to wall, laying on
their sides. 2-4 days.
near maint. garage bldg.

PM

gas?: storage tank (UST) near NE sump.
use unknown

---

outfall from NE sump located
near Botanical conservatory. seek

noticeable sedimentation,

~~Rent~~ ^own rolloff box for baghouse - double plastic liner

---

1 12 hr shifts ≈ 300+ employees
3-6 days a week - seasonal

Waste oil storage area
asphalt paving
drums plus 1 250g. tank
All in good condition

DWW

spent sand is sent through a screen and cooler.

large pieces are collected in the "dumpster"

fines are collected in a cyclone
- all Class II wastes

DML

7/22
2:15PM TVIS

Dave Cummk, Claude Mays, Jeff Leifer (Mittelhauser Corp)

Visual Site visit w/ Mike Widick TVIS

1) Delivered list of new questions
2) Discussed sample locations
3) Checked sample locations w/ Photovac Tip for safety check.

(Tip readings)
Bkg 2.0 ppm

- Reading in sand area ≈ 2.4 in breathing zone
- reading of sand underneath ≈ 4.0 within 1 inch of sand.
- reading in area of waste oil/water runoff sump 3.8 down near sump ≈ 2' off ground.
- Breathing zone 3.0
- in sump = 4.0 ppm.

Indicated to Widick that the samples would probably include a:

background soil	(inorganic + organic)
spent sand area	(inorganic + organic)
Runoff area	(organic)
Duplicate	(inorganic + organic)
Equipment blank	(inorganic + organic)

DWE

VSI Photo log.

7/23/87 tranfered from notes taken by Claude Meyers 7/21/87
Photos taken during VSI 7/21/87 (#'s 1-14)
7/22/87 (# 15)

FRAME/ Photo	TIME	Direction	DESCRIPTION
1	1:15 PM	NW	underground fuel tank location near office
2	1:20 PM	NE	Former disposal pit area (baghouse dust)
3	1:21 PM	E	Slag filled drum
4.	1.24 PM	NW	Edge of former Pit
5	1:27 PM	ESE	drums to edge of wall (pit area)
6.	1:30 PM	NW	spent sand/slag (Class II) Temporary storage area
7	1:34 PM	N	edge of wall, newer left area
8	1:48 PM	SW	discharge pipe to creek
9.	1:50 PM	SSW	discharge pipe to creek
10	1:53 PM	NE	Run off collection sump + tank pad

DMC

Frame/Photo	time	Direction	Description
11	2:00P.M	S	Baghouse (D008) & dumpster
12	2:00P.M	N	waste oil storage area
13	2:15 PM	NE	Fines collection unit & core butt collection from sand belt cooler
14	2.20 pm	NE	Fines collection unit adjacent to Photo 13 — collect ~~[illegible]~~ sand from muller (mixer) fines.
15	2:45 PM	NE	Collection tank for "oils" pumped from runoff collection sump.

DWW

Questions given Widick

Jay-3

7/22/87

TO: Michael Widick, TVIS
From: David Curnock, Mittelhauser Corp.
Subject: Additional Questions for VSI at TVIS

Questions:

1) When did area for waste oil collection come on line.

2) Dust disposal pit beginning date? Our records show it may be 1968. You had indicated ≈1977. Please clarify
   A) If it was 1968, how would this affect dates of baghouse material generation.

3. Wet slag process: How is granulated material (slag) handled after it is quenched in water bath? Is it collected in a box and then dumped into the sand area for removal to the landfill?

4. When was sand first piled for removal in the current area? Was it 1979 when it was first taken offsite?

5 New fines collection box (near dipping area):
   A) Nature of material collected
   B) Size of container
   C) where is it taken when box is full (to sand area or transported to landfill in that box)

DMW

DMW

20

Questions given to [illegible]

Questions Continued)

7/22/87

6. SW cyclone from sand cooler belt
   A) nature of material collected
   B) size of container
   C) When is material taken when box is full (to sand area or directly to landfill in this box)
   D) Date of initial service

7. SW belt "chunks"
   (SAME QUESTIONS AS 6. A-D)

8. SW IRON COLLECTION Hopper
   (SAME QUESTIONS AS 6. A-D)

9. Date of installation of NE sump and use of tank for oil recovery.

10. Underground storage tanks:
   A) Near NE sump — size, dates of service, use, release controls if any, leakage?
   B) Near Office — tanks for gasoline and diesel.
      (SAME questions as A)

11. Oil separator in NE sump: was it always a part of this system or was it added on? IF so when.

DWC

DWL

Questions given to Welch

(Questions, Continued) 7/22/87

12. Is there an NPDES permit for NE sump outfall.

13. Is analysis available on "bituminous paint" used for dipping.

14. Does TVLS plan to close any of its currently operating solid waste management units, if so, what are the anticipated dates.

DNL

DNL

7/24/87 SV
C. Mayo Mittelhauser Corp
D. Cunnock "
J. Leifer "
J. Trezzo HLA
Michael Wichek TVCS

8:00 AM - Most of these answers are best available knowledge

Q1. 1979 - 1980

Q2 · Electric precipitator was in before baghouse
these pits were in 1968

Q3 - wet slag
slag off the trough into a high pressure water spray. This granulates the slag and the water comes off in a closed stream.

Q4 1979 was probably when sand was first collected

Q5 slot blast -
sand and steel shot - mostly sand
≈ 2 yd container
- sand Class II area

Q6 SW cyclone - sand cooler
Fines from foundry sand
≈ 2 yd
dates of service unknown. pre 1980

DAW

Q7 core butt belt. - chunks that don't fall through screen.
- core butts
- metal that may remain in sand after running through magnetic separator
- 2 yd hopper
pre 1980 - unknown

Q8 ~~ton~~ muller hopper
April 1987
- New muller installed with cyclone or air blower to collect fines.
- muller is a mixer.
- fines

Q9. 1979 or 80 date of sump installation.
unknown for sure

Q 10. UST.
New sump (Naptha tank) put in ≈1980 unsure
size unknown
currently in use
5,000 gallons

Diesel 2500 gallons gas 1000 gallons
≈25 years unknown 7-30 yr. unknown date

Dwr

Q 11 Oil separator was probably put in same time as sump

Q 12 No NPDES permit

The sump is located over and down into city water line. It serves other entities other than Trinity Valley.

Q 13 "bitumen paint" materials data sheet copy available

Q 14 No closure of current operating units.

DMW

Reference 4

3109 2

Trinity Valley 4/85

3400 BRYCE P.O. BOX 2388 FORT WORTH, TEXAS 76113 TELEPHONE (817) 738-1925

iron & steel company

02 mont

April 30, 1985

Received MAY 8 1985 Solid Waste Section

Mr. Jay Snow
Chief, Solid Waste Section
Texas Department of Water Resources
1700 N. Congress Avenue
Austin, TX 78711

Dear Mr. Snow:

We transmit herewith a revised closure plan for the hazardous waste landfill at our Fort Worth site. We trust you will find that the report has been revised in accordance with your recommendations wherever possible. The one area not covered in the report concerning the time period the closure will be effective. We have recently written you concerning our limitations in meeting your proposed schedule. We look forward to hearing from you on this matter and are willing to meet with you to arrive at the final time table that would be satisfactory.

The company is willing to begin implementation of the closure plan at your earliest convenience. We also stand ready to answer additional questions which may arise upon your review of this material. We thank you in advance for your consideration of our application.

Sincerely,

TRINITY VALLEY IRON & STEEL COMPANY

Michael G. Wright
Vice President/General Manager

MGW:jm

Enclosures

Received
MAY 8 1985
TDWR Solid
Waste Section

Texas Department of Water Resources

Austin, Texas

CLOSURE PLAN

Hazardous Materials Handling Area

by

Trinity Valley Iron and Steel Company

Fort Worth, Texas

December 15, 1984

TABLE OF CONTENTS

Trinity Valley Iron and Steel Company

Closure Plan

INTRODUCTION

The Trinity Valley Iron and Steel Company has operated a grey iron foundry in Ft. Worth since 1924. In recent years ash from the air pollution control system on the cupola furnace has been impounded in an on-site waste disposal pit. The RCRA regulations have deemed this material to be a hazardous waste. In conformance with the regulations set down by the Environmental Protection Agency (EPA) and the Texas Department of Water Resources (TDWR) for handling of such materials, the company has determined that it is in the best interest of all concerned that this waste site be closed and that all materials of a hazardous nature impounded on site be removed from the premises.

It is the purpose of this report to describe the existing facilities and the materials that are present on site, to present a plan for the safe removal of these materials to a properly licensed disposal area and to develop a method of insuring a clean closure of the hazardous waste management area. The report also describes the precautions that will be observed to insure that no ground water pollution occurs during the period where hazardous materials remain on site.

DESCRIPTION OF THE EXISTING FACILITY

Trinity Valley Iron and Steel Company produces grey iron castings from a variety of scrap iron sources that are obtained over a wide geographic area. A cupola furnace is used for melting the scrap and emissions from the cupola system are collected in a bag house to minimize air pollution from the operations. The plant is located on the site approximately 16 acres in the area between Montgomery Street and University Drive in the vicinity of Brice Avenue in Ft. Worth. The location of the facility is shown in Figure 1, while Figure 2 shows a blow up of the plant property and provides a detailed location of the manufacturing facilities and the waste disposal area. Dust from the bag house of the cupola furnace is collected in 30 gallon plastic bags and sealed before disposal in the pit located on Figure 2. Approximately 200 tons of cupola dust is collected each year. Dust has been collected at the site since approximately the last quarter of 1977.

The entire area on which the facility is sited has been subjected to a variety of filling operations over the years. The foundry by the nature of its operations produces an extensive amount of waste sand which has been land filled on site. In addition to the sand the operations also produce a glass-like slag material which has been collected in 55 gallon steel drums and has been used to build an extensive retaining wall around the south and east edge of the property. This retaining wall has allowed the site to be filled in to approximately 20 feet above the natural grade in that corner of the property. The disposal pit for the bagged cupola ash is located in this fill area and is bounded by the barrel walls. Figures 3 and 4 show the construction of the barrel wall and the approximate location of the ash pit within the fill area.

ANALYSIS OF WASTE

The ash from emission controls of electric furnaces producing iron and steel are deemed to be hazardous based upon the criteria of toxicity. Specifically the present waste, when subjected to acid leaching techniques, is determined to have produced leachate concentrations of lead and cadmium in excess of those levels defined as acceptable under solid waste regulations.

The dust is a grey brown material with little structural integrity. The material varies in density from approximately 35 to 45 pounds per cubic foot depending upon the degree of compaction. A complete analysis of the dust was performed in December, 1979 and is included as Table 1. There is little reason to believe the dust has significantly changed composition since that time.

In the first quarter of 1982, studies were performed to examine the leaching of heavy metals from the dust both under acitic conditions as specified in the EPA toxicity test methods and in clean water. The results of those tests are presented as Tables 2 through 5. The results are graphically summarized in Figure 5. The results of the study indicate that acid extraction produces lead and cadmium concentrations significantly in excess of those limits defined under hazardous waste disposal regulations. Extraction is in clean water or at a pH in excess of 7 result in virtually no extraction of heavy metals from the ash. An additional analysis of the ash was computed in 1984 and is shown as Table 6.

A review of 40 CFR Part 261 Appendix VIII constituents indicate that the following compounds might be present in the ash.

Arsenic and compounds NOS

Barium and compounds NOS

Cadmium and compounds NOS

Calcium Chromate

Lead and compounds NOS

Mercury and compounds NOS

Nickel and compounds NOS

Silver and compounds NOS

Tetraethyl lead

Analysis will be performed on the site after removal of the contaminated ash to assure that none of these compounds are present above background levels. The method of obtaining background samples is discussed elsewhere in this application.

SOUTHWESTERN LABORATORIES

FORT WORTH DALLAS HOUSTON MIDLAND BEAUMONT TEXARKANA

CONSULTING, ANALYTICAL CHEMISTS AND TESTING ENGINEERS

Fort Worth, Texas 12-26-79 File No. A275000

Report of tests on Dust

To Trinity Valley Iron & Steel Co. Date Rec'd. 11-15-79

Received from

Identification Marks P.O. No. 8416

METHOD - TDWR, TECH. GUIDE No. 1, 3-1-78, PART IV

SOLID WASTE EVALUATION LEACHATE TEST (DISTILLED WATER)

Dust - Dry Basis

Moisture	0.12%
Silicon Dioxide	41.6%
Iron Oxide	25.6%
Aluminum Oxide	3.41%
Calcium Oxide	7.17%
Magnesium Oxide	1.20%
Sulfur Trioxide	6.31%
Sodium Oxide	0.60%
Potassium Oxide	0.16%
Titanium Oxide	0.23%
Loss on Ignition	13.0%
Phosphorus	0.15%
Arsenic	54 ppm
Barium	744 ppm
Boron	289 ppm
Cadmium	0.03 ppm
Zinc	31 ppm
Tin	0.28 ppm
Nickel	0.13 ppm
Chromium	< 0.01 ppm
Copper	0.72 ppm
Molybdenum	0.10 ppm
Selenium	3 ppm
Mercury	4.1 ppm
Manganese	13 ppm
Lead	850 ppm
Silver	0.05 ppm

Lechate

Arsenic	< 0.01
Barium	3.8 p[illegible]
Zinc	14 ppm
Tin	0.01
Chromium	< 0.01
Selenium	0.2 pp[illegible]
Mercury	< 0.01
Lead	0.4 p[illegible]
pH	7.35

TABLE 1

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

LABORATORY REPORT

CLIENT: Trinity Valley Iron & Steel — DATE: 4/12/82

PROJECT #: 1101-2000 — P.O. #: 2621

SAMPLE #: 1981

SAMPLE DESCRIPTION: #16-1 Harsell Baghouse Dust (2-26-82)

EP TOXICITY TEST

WEIGHT USED: 100.4g — FINAL PH: 5.1 — ACID USED: 400 mls

PARAMETER	RESULT	HAZARDOUS WASTE LIMITS
ARSENIC	0.022	5.0 mg/l
BARIUM	< 0.2	100.0 mg/l
CADMIUM	2.30	1.0 mg/l
CHROMIUM-TOTAL	0.14	5.0 mg/l
LEAD	86.7	5.0 mg/l
MERCURY	0.0011	0.2 mg/l
SELENIUM	0.010	1.0 mg/l
SILVER	< 0.02	5.0 mg/l

Paul E. Duranceau

Paul E. Duranceau, Laboratory Director

All leaching tests and leachate analysis meet Environmental Protectio
Agency requirements as outlined in the May 19, 1980, Federal Register
40 CFR 261.

TABLE 2

<u>RESIDUALS MANAGEMENT TECHNOLOGY, INC.</u>

LABORATORY REPORT

CLIENT: Trinity Valley Iron & Steel DATE: 4/12/82

PROJECT #: 1101-2000 P.O. #: 2621

SAMPLE #: 1982

SAMPLE DESCRIPTION: #16-2 Harsell Baghouse Dust (3-1-82)

<u>EP TOXICITY TEST</u>

WEIGHT USED: 100.3g FINAL PH: 5.1 ACID USED: 315 mls

PARAMETER	RESULT	HAZARDOUS WASTE LIMITS
ARSENIC	0.019	5.0 mg/l
BARIUM	< 0.2	100.0 mg/l
CADMIUM	3.30	1.0 mg/l
CHROMIUM-TOTAL	< 0.05	5.0 mg/l
LEAD	53.2	5.0 mg/l
MERCURY	0.0032	0.2 mg/l
SELENIUM	0.014	1.0 mg/l
SILVER	< 0.02	5.0 mg/l

Paul E. Duranceau

Paul E. Duranceau, Laboratory Director

All leaching tests and leachate analysis meet Environmental Protection Agency requirements as outlined in the May 19, 1980, Federal Register, 40 CFR 261.

TABLE 3

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

LABORATORY REPORT

CLIENT: Trinity Valley Iron & Steel DATE: 4/12/82

PROJECT #: 1101-2000 P.O. #: 2621

SAMPLE #: 1983

SAMPLE DESCRIPTION: #16-3 Harsell Baghouse Dust (3-2-82)

EP TOXICITY TEST

WEIGHT USED: 100.2g FINAL PH: 5.1 ACID USED: 320 mls

PARAMETER	RESULT	HAZARDOUS WASTE LIMITS
ARSENIC	0.018	5.0 mg/1
BARIUM	< 0.2	100.0 mg/1
CADMIUM	3.40	1.0 mg/1
CHROMIUM-TOTAL	< 0.05	5.0 mg/1
LEAD	67.2	5.0 mg/1
MERCURY	0.0019	0.2 mg/1
SELENIUM	0.009	1.0 mg/1
SILVER	< 0.02	5.0 mg/1

Paul E. Duranceau

Paul E. Duranceau, Laboratory Director

All leaching tests and leachate analysis meet Environmental Protection Agency requirements as outlined in the May 19, 1980, Federal Register, 40 CFR 261.

TABLE 4

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

LABORATORY REPORT

CLIENT: Trinity Valley Iron & Steel DATE: 4/12/82

PROJECT #: 1101-2000 P.O. #: 2621

SAMPLE #: 1984

SAMPLE DESCRIPTION: #16-4 Harsell Baghouse Dust (3-3-82)

EP TOXICITY TEST

WEIGHT USED: 100.3g FINAL PH: 5.1 ACID USED: 345 mls

PARAMETER	RESULT	HAZARDOUS WASTE LIMITS
ARSENIC	0.018	5.0 mg/l
BARIUM	< 0.2	100.0 mg/l
CADMIUM	3.70	1.0 mg/l
CHROMIUM-TOTAL	< 0.05	5.0 mg/l
LEAD	73.6	5.0 mg/l
MERCURY	0.0021	0.2 mg/l
SELENIUM	0.011	1.0 mg/l
SILVER	< 0.02	5.0 mg/l

Paul E. Duranceau

Paul E. Duranceau, Laboratory Director

All leaching tests and leachate analysis meet Environmental Protection Agency requirements as outlined in the May 19, 1980, Federal Register, 40 CFR 261.

TABLE 5

TALEM, INC.
820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P.O. Box 2388
Fort Worth, Texas 76101

Date of Report: 8-30-84

Lab Reference No.: 0432

Attention: Reed Lemons

Date Received: 8-14-84

Identification: H. Baghouse Dust/8-13-84

Collected by: Customer - pick up

Arsenic, (mg/Kg, atomic absorp. hydried method, EPA Method 7061)	<0.1
Barium, (mg/Kg, atomic absorp. direct aspiration, EPA Method 7080)	119
Cadmium, (mg/Kg, atomic absorp. direct aspiration, EPA Method 7130)	236
Chromium, (mg/Kg, atomic absorp. direct aspiration, EPA Method 7190)	420
Lead, (mg/Kg, atomic absorp. direct aspiration, EPA Method 7420)	14,180
Mercury, (mg/Kg, in lquid waste, cold vapor, EPA Method 7470)	5.2
Selinium, (mg/Kg, atomic absorp. hydried method EPA Method 7741)	8.9
Silver, (mg/Kg, atomic absorp. direct aspiration, EPA Method 7760)	160

TABLE 6

QUANTITY OF THE ASH IN STORAGE

Ash has been accumulated at the site for approximately six years at a quantity estimated at 200 tons per year. If a medium density of 40 pounds per cubic feet is assumed, it can be estimated that approximately 2250 cubic yards of ash is presently stored in the disposal pit. A certain quantity of the ash has broken out from the bags and is mixed with adjacent sand. Sand has also been employed to separate provine cover for bags during periods of inactivity of the fill. A conservative estimate suggests that approximately 3450 cubic yards of mixed ash and sand will have to be removed from the pit in order that all contaminated materials be satisfactorily recovered.

The fill area is a trapezoid, 80' x 87' at the surface, with a 1 to 1 slope. The total volume of the trapezoid is approximately 3,480 cubic yards. Four separate measurements of the ash have been conducted. The average density of the ash is estimated at 40 lbs. per cubic foot, although values have ranged as high as 48 lbs. per cubic foot, Operations during the first year were not continuous and several disruptions in the plant operations have occurred during the seven calendar years in which the system has operated. It is estimated that six years of continuous operation is reflective of the total quantity accumulated. Accounting for 3,450 cubic yards over the entire area of the fill is realistic. Estimates will be adjusted as experience with the site dictates. In any case, all material will be removed within the agreed time frame. The land fill is presently filled and discharge to the land fill has ceased. After commencement of closure activities, no additional wastes will be placed in the land fill.

PROPOSED ACTIVITIES

Overview of Proposed Activities

It is proposed to sample the ambient soil at a depth approximately equal to the base of the ash pit. These samples will be run in accordance with EPA approved extraction procedures and will determine the lead and cadmium present in the ambient soil. These values will be used as a guide line to determine if complete clean closure of the site has been achieved.

It is the intention of the company to effect clean closure of the site by removing all contaminated ash and adjacent soils that have become incidentally contaminated with the ash from the site. During the period of removal rain water will be prevented from running from other areas of the property on or through the exposed ash pile. Precautions will also be taken to protect the ash from any direct rainfall and to transfer any collected rainwater away from the ash site. The ash itself will be hauled to an approved land disposal site. The fill area is located at the high point of the surrounding area and will be built up to an elevation of 587 (see Fig. 7). This will cause all flow that does not fall directly on the pit area to flow away from the excavation. The actual built up area will be approximately 120' long and will connect the existing grade at either end of the area. Rather than a true dike and ditch system, the entire area will slope away in a gradual manner from the excavation.

Table 6B presents the 200 year frequency storm data for the Fort Worth area. The area immediately adjacent to the fill will be covered with clay and will run off, but over the majority of the site percolating through the sand fill as well as surface drainage will be responsible for transporting the rainwater to the surface streams. The handling of water that falls directly on the pit area will be discussed in a subsequent section of this report.

Table 6B

Fort Worth, Texas

Rainfall Analysis 100 year frequency[1]

Period	Total Accumulation in.	Gal/Acre
30 min.	3.4	92,500
1 hr	4.4	120,000
3 hr	6.0	163,250
6 hr	7.0	190,450
24 hr	10.0	272,000

[1] Rainfall Frequency Atlas of the United States
Technical Paper No. 40
Department of Commerce/ U.S.A.

The ash itself will be hauled to an approved land disposal site. The location of the land disposal site will be submitted to the Texas Department of Water Resources for approval prior to the transport of materials. The facility will be an authorized hazardous waste disposal facility. After all waste has been removed from site the area will be filled in utilizing the sand from foundry operations.

During the period while removal of the ash is in progress continuous studies of ground water in and around the disposal site will be conducted to insure that no migration of materials into the ground water is being observed. These observations will be continued for a minimum period of at least two years after the clean closure has been achieved at the site. All ground water sampling will be on a quarterly basis.

EXISTING GROUND WATER QUALITY

Test wells have been located at the site and have been analyzed in accordance with those procedures defined by TDWR. The location of the test wells is shown in Figure 6. The detailed results of the analysis performed at these sites have previously been reported to the department and are included in the Appendix to this report for convenience of review. Table 7 presents a summary of the statistical analysis of the data that has been performed to determine if any measurable contamination of ground water has been observed. The results of the studies presented in this table indicate that no contamination of the ground water has been measured. It is the company's intention to continue this ground water monitoring during the remaining period while ash is stored on site. In addition, the company intends to install one additional testing well in the southeast corner of the enclosure containing the ash. The location of this well is shown on Figure 6. This well will be installed in May, 1985 if this plan is approved by then, or within 30 days of approval of a plan.

SUBSURFACE SOIL ANALYSIS

Over the previous several years, a variety of points on the site property have been drilled to accumulate soil data. These logs are presented in the Appendix to this report. In preparation of this report, two additional borings were made in the immediate vicinity of the ash pit. These logs are also included in the Appendix. Results of the soil analysis indicate that the majority of overburden soils through the first twenty feet are essentially fill consisting of foundry sands. Below this, tan grey silty clay is seen to exist above a compacted limestone strata. Samples of the underlying strata have been retained and these samples will be analyzed to secure the base line concentrations of lead and cadmium in the ambient soil. The results of these analysis will be provided to TDWR as soon as available and an agreement will be secured on the use of these values as background.

TABLE 7

Statistical Comparison of Well Data[1]

"T" Statistic*

Parameter	Well 2	Well 2	Well 3
PH	0.98	0.18	0.22
Specific Conductance	0.18	1..8	0.58
Total Organic Carbon	0.32	0.42	0.76
Total Organic Halogen	0.07	0.39	0.42

* Degrees of Freedom - 18

1

The data used in calculating these values is presented in Appendix 2 as is the calculation procedure and an example calculation.

Potential for Ground Water Contamination

In 1975, Southwestern Laboratories conducted subsurface investigations of the foundry site. The results of these studies indicate a 25 foot thick layer of clay exists between the ground surface in the main foundry area and the permanent water table. The analyses that were taken during this study are presented in the Appendix to this report. Soil samples taken from the core borings and analyzed for their physical properties indicate plasticity values ranging from 23 to 36, indicating a high clay composition of the underlying soils. This clay boundary would seem to be adequate to insure that no downward migration of incidental waters disposed in or around the pit would occur. The basic soils underlying the entire site are alkaline in nature and contain a significant quantity of limestone. These soils would tend to neutralize any acidic water that would leach into the ground immobilizing and preventing transport of either lead of cadmium ions if such a problem were to develop.

Soil samples were collected at the pit area and from the vicinity of the foot of the wall. 200 grams of soil from each location was suspended in 100 ml of diluted water adjusted to a pH 7.0 and leached for 24 hours. The pH of each soil sample was measured using a research grade pH meter. The sand sample at the pit had a pH of 7.2 while the soil at the base of the wall had a pH of 7.25. Samples of the underlying limestone will be collected when test well (6) is drilled. Available literature suggests that the pH of these soils will range from 7.5 to 8.5. The results of these tests will be reported when available.

Acid rain data available for the Camp Bowie Station of the Texas Air Control Board shows that for the last reported year, 1983, the pH of rainfall in that area ranged from 4.6 to 5.0 with a mean value of 4.8.

Data available from the Council of Government Continuous Stream Monitoring Station at Fort Worth, above the influence of the area treatment plants show that for the same period the surface water had a pH range of 6.7 to 9.8 with an average pH of 7.8. To test this condition, a sample of distilled water was adjusted to pH 4.8 and 200 ml of this water was mixed with 200 grams of the sand from the pit area. The resulting pH measured 5 minutes later was 7.15. After one hour the pH raised to 7.2. These data support the conclusion that the rainwater should not have a measurable leaching effect on the lead and cadmium in the ash or if some leaching did occur that the materials would be precipitated in the soil in immediate proximity of the disposal area.

REMOVAL OF MATERIAL FROM SITE - TIME REQUIRED

The plant is presently developing equipment and technique that minimize the production of ash, however the production of ash will continue for the foreseeable future. The present rate of ash accumulation is estimated to be 375 cubic yards per year. It is not within the economic resources of the company to dispose of this ash at an authorized hazardous disposal site and to empty the pit in the 180 days specified under the provisions of the law. It is therefore requested that a variance in the time required to transport the material off site be granted. The company proposes to handle the present ash and to remove the ash that has previously been impounded from the site over a period not to exceed five years. Based upon extrapolation of present data, it is estimated that the company would produce 1800 cubic yards of ash during that period. In addition 3450 cubic yards of ash would have to be removed from the site for a combined total of 5250 cubic yards of ash requiring disposal. It is proposed to transport approximately 100 yards of ash per month to permanent disposal. In actuality 7 trips of 30 yards would be accomplished in each two month period. This would allow ample flexibility to account for any bad weather delays or in variations in the exact quantity of material that might require disposal.

Should the company be able, through improved technology, to minimize the quantity of ash produced on a operating basis, the ash disposal rate would be continued at the 100 cubic yards per month, thereby diminishing the total time required to complete closure of the present site.

Cost of Disposal

The price of transporting wastes to disposal has been estimated for transportation to the Deer Park area, Texas and to the Robtstown site in Texas. The difference in transportation cost is offset by a lower unit disposal cost at the Robtstown site. A final selection of disposal option will not be made until the plan it approved and the final contract is bid. The estimated overall site closure costs are:

DISPOSAL COST ESTIMATE

Preliminary Site Work	
Grading and Construction of Dike	$ 4,800
Covering of Pit Area	$ 3,600
Self Priming Pump and Piping	$ 1,450
Subtotal	$ 9,850
Ash Disposal	
Loading of Ash	
115 units of 30 y^3 @ $300	$ 34,500
4 man days plus $50 = $300	
Transportation	
3375 y^3 @ $35/$y^3$	$118,125
Disposal	
3375 y^3 @ 33/y^3	$111,375
Site Work @ $100/load	$ 11,500
Subtotal	$275,000
Monitoring	
Installation of additional well	$ 2,000.
Sampling - 4 wells/2 times each year $3200/year x 7	$ 22,400.
Soil Testing	
10 samples @ 1000	$ 10,000
Subtotal	$ 34,400
Final Site Work and Grading	$ 7,500
Engineering Inspection and Closure Certification	$ 10,000
Subtotal	$ 17,500
TOTAL	$337,250
OH & Adm (15%)	$ 50,000
Contingencies	$ 35,000
	$422,250

RUN OFF AND RUN ON CONTROL DURING EXCAVATION

Control of run on water is important during the excavation period, since it is possible that ash if exposed from time to time could contaminate water running through the site. It is therefore intended to surround the working pit area with a barrier of clay, compacted to form a covered area sloped to prevent run-on water. The area will be graded to insure that all water would flow along the slope and away from the working pit. A topographic map of the area is included as Figure 7. The approximate location of the slope has been shown in this drawing. Experience with the area in the past show that very little water actually runs overland in the general vicinity of the disposal area. It is not anticipated that any significant problems will be encountered in management of storm run-on to the site.

Storm run-off or drainage through the site during the period where the site is being excavated requires significant attention. A variety of possible schemes for controlling water that might fall on the site have been considered. These have included construction of an inflatable building over the site, construction of a permanent roofing structure, and temporary covering of the area with tarpaulins. In the latter case water would be pumped away from the site by a self priming pump located at the site for that purpose.

The inflatable building proved infeasible since the size and necessary access requirements could not be met with available structures. The construction of an overall roof structure would require the driving of piles through the fill area and could cause the breaking of ash bags and the transport of ash into the ground. The cost of such a structure is also very high. The shed roof can better be constructed after the initial layers of bags have been removed if required.

The most logical and economic approach is to cover the area with soil and to grade the impoundment for proper run-off conditions. The graded area would then be covered with tarpaulins so that rain falling on the area, would flow away from the site. Excavation could begin under the front quarter of the area with the tarpaulins being removed during the period where active removal of material of the site would occur. Tarpaulins would then be replaced to cover the soil during inactive periods. Any water that would pond on the tarpaulins because of depressions caused by excavation would be pumped off to the adjacent storm water system and not allowed to leak into the ash pit. After the ash in the pit had been lowered to the point where the ash had moved in from the outer boundaries of the pit, it would be possible to construct a shed type cover over the excavated area thus preventing the necessity of covering the active area of excavation with tarpaulins if this is found to be desirable. It is envisioned that this cover structure could be erected in the second phase excavation, if experience proves that it is necessary.

In the case of low frequency high volume storms the rate of accumulation of storm water would be beyond the pumping capacity which is only intended to remove standing water. In the 100 year rain, as much as 1000 gal/min might reach the pit area at times.

The ash itself will be covered with an impermeable cover so this water will flow to the sides of the work area which is sand and will flow off the site. The sand is sufficiently permeable that significant standing water should not develop. Since this is a real possibility during the closure period care will be taken to remove all ash from the side areas above the covered area.

Covering the area with tarpaulins has a secondary benefit that it will prevent any wind blown transportation of the ash material during the period where the ash continues to remain on site. It is unquestionable that a certain portion of the bags will be broken during the handling for disposal. Control of the ash transportation as an airborne particle is therefore considered highly desired.

Dust control will be effected by covering the entire area with the tarpaulins when excavation is not underway. During periods when excavation is under way, only the areas necessary for the operations will be uncovered. Work will be performed only on days when conditions are not excessively windy.

STABILITY OF THE SITE DURING ASH REMOVAL

A detailed study of the soil stability in the pit and the stability of the barrel wall has been conducted and is included in the appendix of this report. The report concludes that neither slumping nor deep sliding will occur on either side of the pit as the ash is removed. The report also recommends that the top five feet of the impoundment be removed in a layer to minimize any disruption of the walls by construction activities.

PROTECTION OF THE SITE COVERS

Heavy equipment will not be allowed to drive on the tarpaulins at any time. The tarpaulins will be moved off the active area by hand when ash is to be removed. The supervisor will insure that the handling procedures will not damage the tarpaulins.

BROKEN BAGS

Any broken or visibly weakened bags or bags that leak in any way or appear they may leak will be repacked in a careful manner to prevent spillage and airborne dispersion.

PRECAUTIONS FOR PERSONNEL AND EQUIPMENT HANDLING MATERIAL

It is envisioned that a certain amount of contamination with dust will occur both to men and equipment involved with the removal activities.

All activities associated with the handling, moving, or transporting of contaminated ash will be conducted under the direction of an individual trained in the handling of hazardous wastes. This individual will confer with the consultant before beginning of any operations, will familiarize himself with all regulations pertinent to the safety of the material, and will be instructed where appropriate in other areas dealing with the safe management of these materials.

All personnel involved in the handling of material will wear apparatus capable of protecting them against inhalation or skin contact with the ash. Workers will wear nylon jumpsuits treated with neoprene to minimize the penetration of dust particles to their underlining clothing. Workers will also be provided with boots and a hard hat. Safety goggles and a respirator that covers both the nose and mouth will be provided. The respirator will be a conventional cloth type system that will be adequate for the class of dust to be encountered.

The coveralls and outer clothing employed by individuals involved in the handling of the ash will remain on site and will be cleaned in an appropriate manner. The outer wear will be shaken clean at the site at the end of each working period. The boots should be washed down if an unusual amount of material is accumulated. The wash would be back into the pit. The jumpsuits could be laundered in a conventional system or commercial laundry. There is no reason to believe that a significant amount of hazardous materials that would constitute a violation of the discharge standards from any commercial laundry would be accumulated. All equipment involved in handling of the ash will be cleaned in the ash pit after the operations have been completed. Cleaning will be accomplished by brushing all free residual material from the backhoes, shovels, etc. that have been involved in the operation. The wheels of vehicles will be cleaned as they leave the pit area. In this manner all ash should be confined on a continuing basis to the pit itself. Operations will not be conducted on days when the wind is sufficiently brisk to cause air borne particles to be blown from the pit.

SOIL TESTING

After all visible ash and contaminated soils have been removed from the pit, five samples will be removed from the first foot of soil at the bottom of the exposed area. The samples will be taken from separated points within the pit in such a manner that they realistically represent the distribution of materials at the bottom of the pit. Each sample will be subjected to analysis in accordance with the EPA technique developed for the estimation of EP toxicity. Specifically the samples will be admixed with the appropriate quantity of acetic acid and agitated for a period of 24 hours. The leachage from the extraction will be subjected to analysis for all EP toxic criteria, and for the 40 CFR Part 271 Appendix VIII Constituents Identified Elsewhere in this Report as possibly present. The results of these analysis will be made available to the Texas Department of Water Resources within 15 days after they have been secured. A discussion with the Department will be scheduled as soon as possible after they have had an opportunity to review the data. The pit will not be in any way filled in or altered until the results of the analysis have been discussed with the Texas Department of Water Resources.

CLOSURE OF THE PIT AFTER CLEANING

After it has been agreed that all contaminated soils have in fact been removed from the pit, the pit will be employed as a disposal area for refinery sand. Over a period varying in length depending upon the rate of production of the facility, the area will be filled in and brought back to natural grade. It is not anticipated that there will be any requirement to cap the area with any material other than that consistent with the remaining soils on the site since all contaminated materials have been removed. Ground water monitoring will be continued for a period of two years after the pit area has been filled in and brought up to level with the adjacent areas.

Local clay will be used to cover the site. The clay will be placed in six inch layers over an area approximately 50% greater than that encompassed by the fill. The clay will be applied in six inch layers and will hydraulically rolled to 95% of its compaction limit. Twenty-four inches of clay would be deposited in four lifts. The overall permeability of the area should be less than1 x 10 - 7 cm/sec. If clean closure is not achieved, the deed will continue to reflect the presence of hazardous materials on the site.

SECURITY

The entire Trinity Valley Iron and Steel site is enclosed to provide security against access by unauthorized individuals. Entrance to the site is limited to a guarded gate which is continuously monitored by security personnel. All individuals entering the site must register and define their purpose and destination on the site. The boundaries of the plant are regularly inspected and any disruption of the fencing or any other peripheral controls is immediately repaired. There is no reason to believe that any unauthorized access to the site will be encountered.

The actual area in which the ash is stored is identified as a hazardous materials area and appropriate signs are placed to warn individuals of the presence of these materials. The area in which the pit is located is an area requiring special protective clothing, including hard hat for all individuals in the immediate area. There is no reasons for unauthorized personnel to be present in this portion of the plant site.

CERTIFICATION OF CLOSURE

A professional engineer will be available to continuously overview the operations resulting in the removal of the ash from the site. The engineer will make periodical reports to management on the progress on this project. The engineer will report to the State on a quarterly basis on the quantity of materials that has been removed during that period. After all material has been removed and the final tests of the soils have been completed, the engineer will confer with the State on the appropriate manner and time schedule for filling in the excavated hole. When closure is completed, the owner or operator will submit to the Executive Director certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

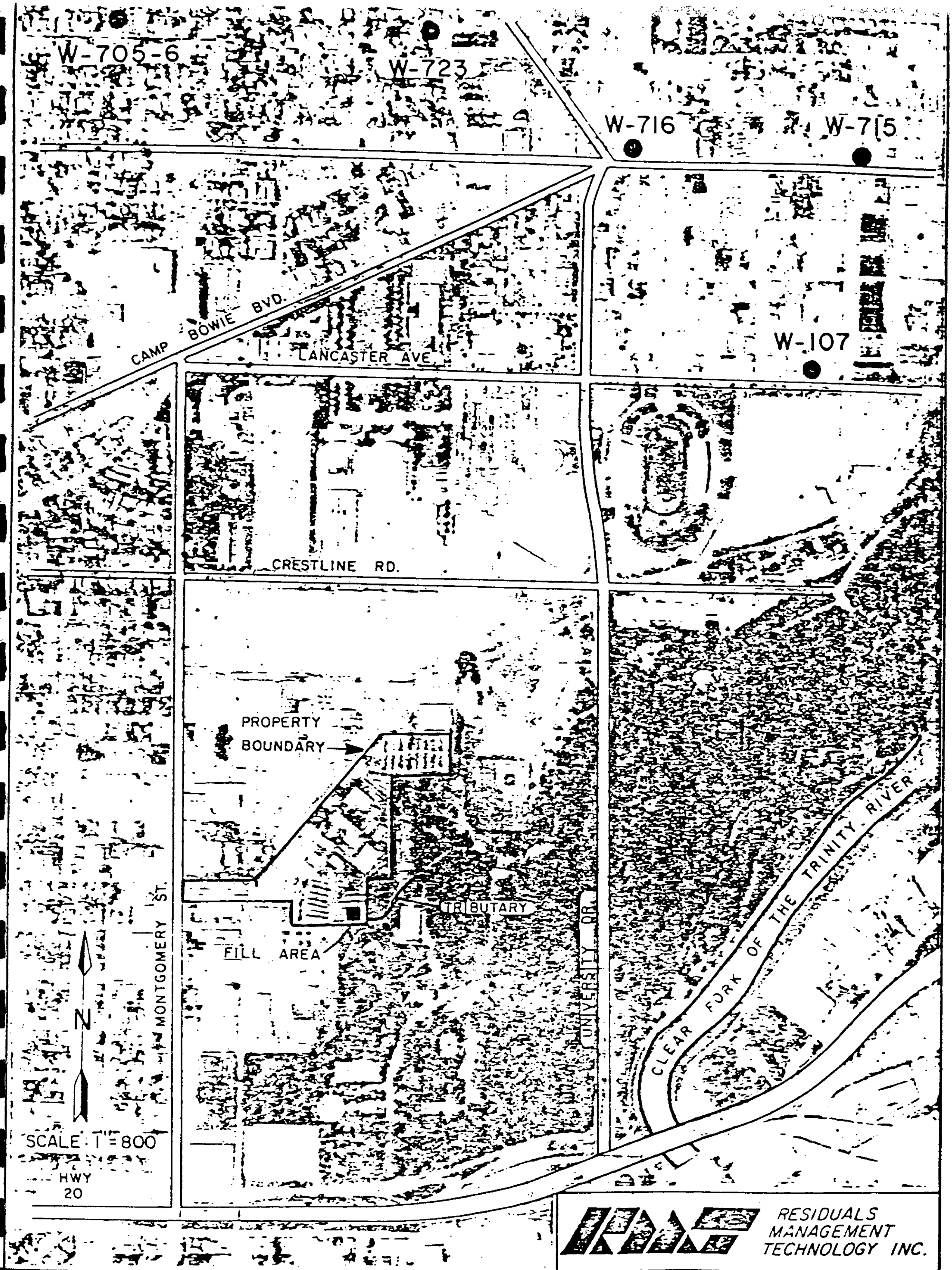

W-705-6
W-723
W-716
W-715
W-107
CAMP BOWIE BVD.
LANCASTER AVE.
CRESTLINE RD.
PROPERTY BOUNDARY
TRIBUTARY
FILL AREA
UNIVERSITY DR.
MONTGOMERY ST.
CLEAR FORK OF THE TRINITY RIVER
N
SCALE 1"=800'
HWY 20
RESIDUALS
MANAGEMENT
TECHNOLOGY INC.

FIGURE 1

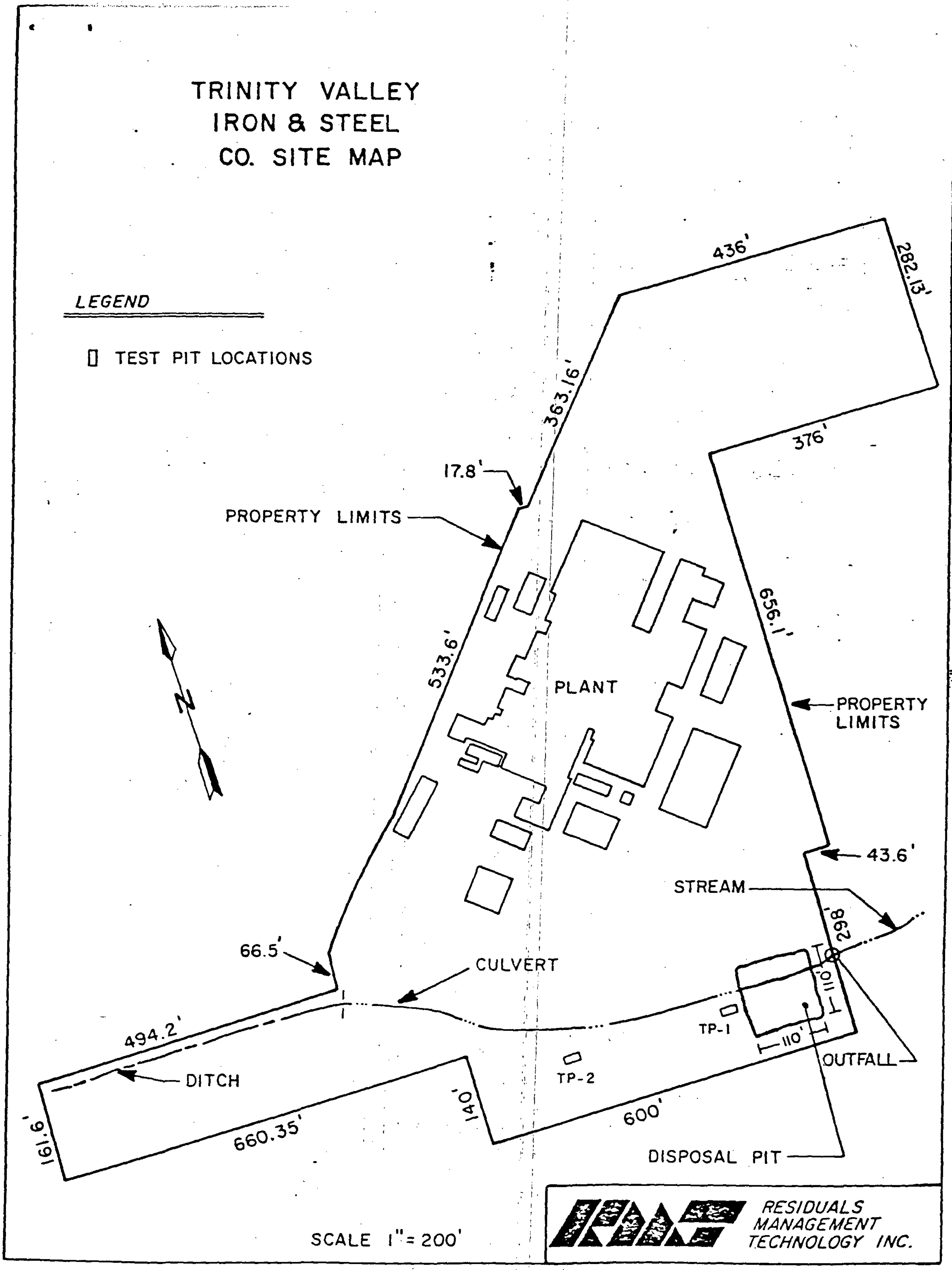
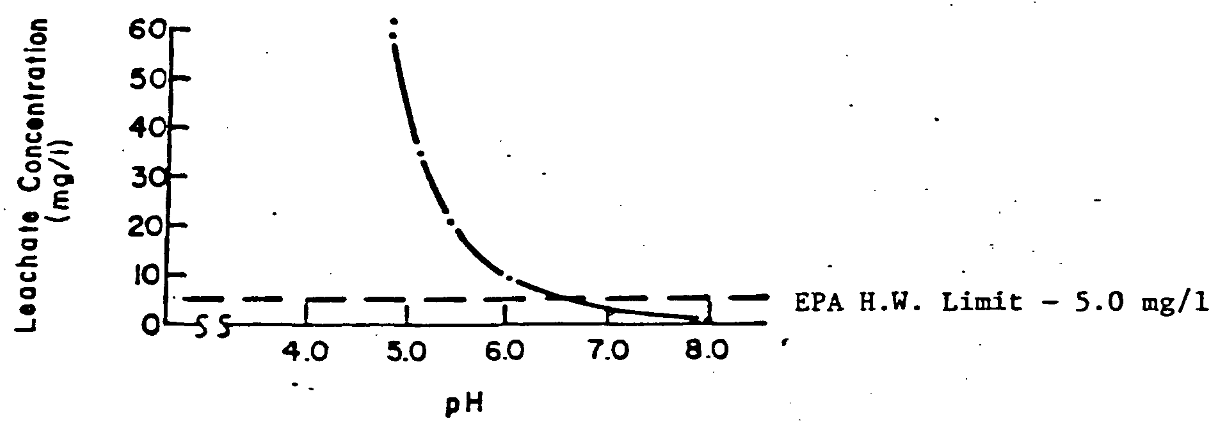
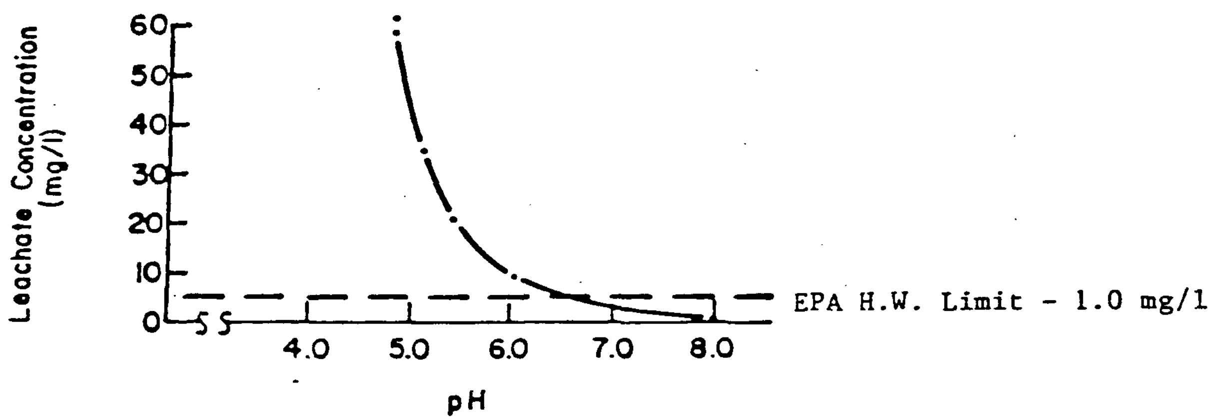

TRINITY VALLEY IRON & STEEL CO. SITE MAP
LEGEND
TEST PIT LOCATIONS
N
436'
282.13'
363.16'
376'
17.8'
PROPERTY LIMITS
656.1'
533.6'
PLANT
PROPERTY LIMITS
43.6'
STREAM
298'
66.5'
CULVERT
110'
TP-1
110'
494.2'
OUTFALL
DITCH
TP-2
140'
600'
161.6'
660.35'
DISPOSAL PIT
SCALE 1" = 200'
RESIDUALS MANAGEMENT TECHNOLOGY INC.

FIGURE 2

FIGURE 5: CUPOLA FURNACE DUST LEACHING TEST RESULTS



A. Lead vs pH



B. Cadmium vs pH

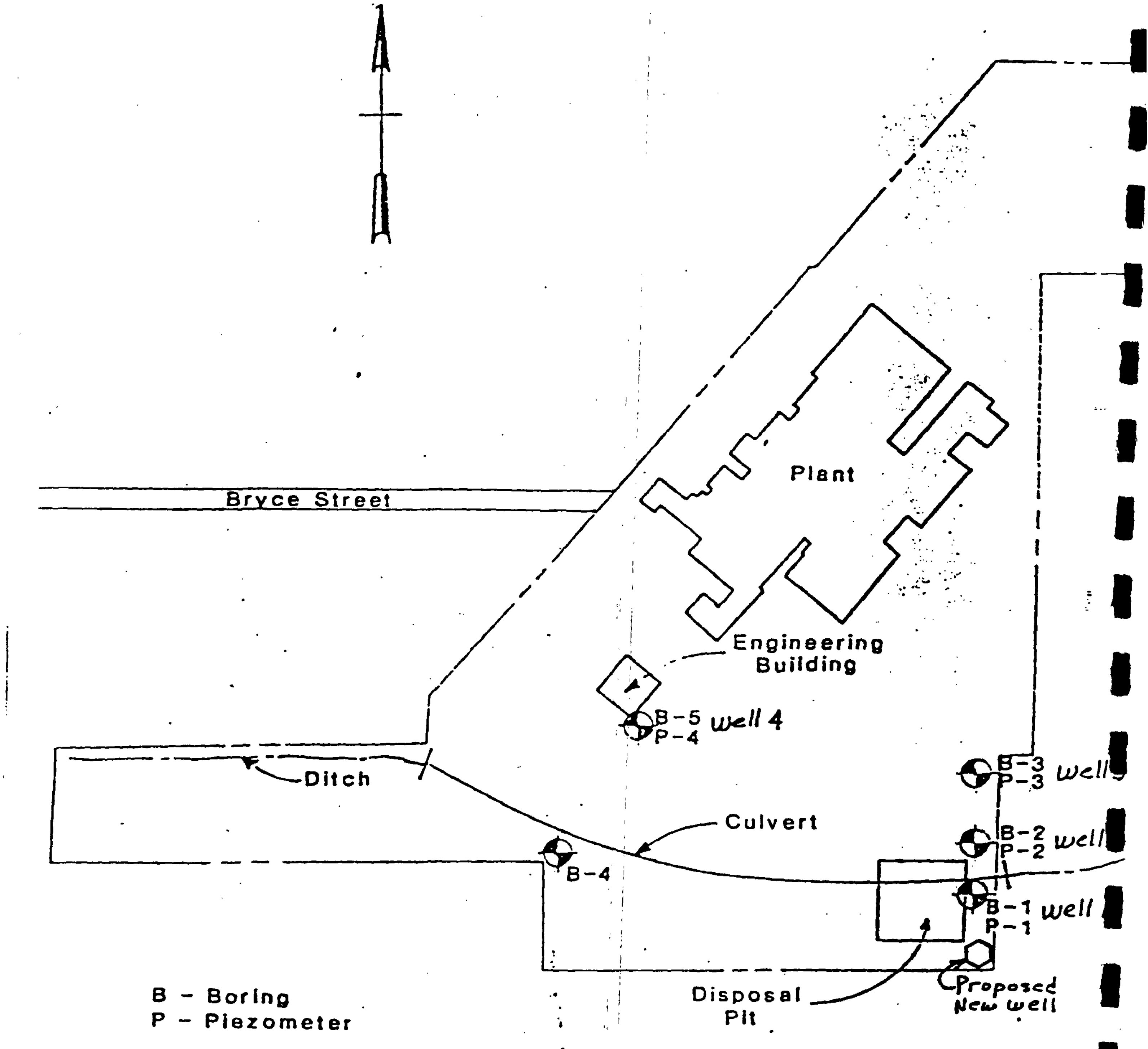


Fig 6

Plan of Borings

Project Trinity Valley Iron & Steel Co.			
Scale 1" = 200'	Date 02-24-83	Drawn By JEL	Rone. Engineers

Appendix 1

SOIL STABILITY STUDY

CECIL H. SMITH, PH.D., P.E.
ENGINEER

P. O. BOX SMU X26X 431
DALLAS
TEXAS
75275
214/692-3071
368-6852

8 December 1984

Mr. Edwin L. Barnhart, President
ELBA, Inc.
Dallas, Texas

Dear Ed:

At the Trinity Valley Iron and Steel Company of Ft. Worth there is a problem with handling the waste fly ash in the disposal pit on the property. One solution is the removal of the ash to another disposal site. The ash pit-roughly triangular in area-is located at the southeast corner of the property. It is confined on the east and south legs by dikes. There has been some question about maintaining the stability of these dikes as the ash is removed in order to preclude any spillage of the ash off the property. At your request I made an investigation of these dikes. Below are my findings and conclusions regarding their stability. There is also a recommended excavation sequence for maximum safety against spillage.

HISTORICAL BACKGROUND

The natural topography of the site is a slope from the foundry area down to the east and south. Over the years it has been the practice to level this slope by depositing foundry wastes behind a series of advancing dikes made up of stacked barrels of slag. With progress down the slopes these "retaining structures" would increase in height. I interviewed three longtime employees of the Company-Messrs. Elmo Wright, Calvin Hopkins, and Don Mason. From them I understand that at the time ash disposal became a problem only the southeast corner of the property remained at the natural elevations. To prepare the area outside forces were contracted to build the final set of dikes along the property lines to almost their present elevation. These were free standing structures. The buildup of ash then encroached up the backside of these dikes until now only a small area is not to full 585 elevation (see Carter and Burgess topo. map). I understand the order of construction was to stack slag barrels in staggered strips away from the property line-several barrels wide-and then fill behind them with foundry waste to a stable backslope. Based on my observations, the topo. map, and the boring log B-1 from the Report 3-0506-1 of Rone Engineers (attached) I have constructed what I believe to be the geometry of the dikes as they were constructed. See Figures 2 and 3 below.

SOIL DATA

The stability analysis of a slope requires information on its geometry and the character of the soils. From the Report 3-0506-2 of Rone engineers the natural ground is a stiff to hard silty clay. At the site a sample of the dike material was obtained from the side of the backslope. It consists mainly of cohesionless angular foundry sand, black binder material, and scrap from the foundry operation. The majority passes the #4 sieve and is retained on the #40 sieve.

The specimen for tests was prepared by first sieving out all material greater than the #4 sieve. It was then placed loosely in the direct shear box with moderate tamping to fill the box and level the surface. The specimen was then loaded with a normal stress of 0.5 T/ft^2 and consolidated essentially under that load-this in an effort to model the loose fill procedures of construction. The specimen was then sheared and the maximum shear stress recorded. After this test the specimen was broken up and retested under a 1 T/ft^2 normal stress. The results are presented in Figure 1 below. The angle of internal friction (ϕ) is 40^o.

STABILITY ANALYSES AND CONCLUSIONS

A cohesionless slope can become unstable in two modes: 1. Surface slumping, and 2. Deep sliding.

Where there is little or no compactive effort in placing, the sides of a fill will slump to a more or less constant angle (the angle of repose) no matter how high the fill is stacked. This can be seen in any sand or rockpile. This angle is equal to the angle of internal friction. The factor of safety against slumping (F.S.) is 1.0. If the slope is built at an angle (β) shallower than ϕ the safety increases as: F.S.= $\frac{\tan\phi}{\tan\beta}$. The front slope of the south dike and the backslopes of both dikes were found to be less than 40^{o}. The front slope of the south dike is further reinforced by stacked barrels. The conclusion is that these slopes will not experience surface slumping. If indeed the backslopes did experience surface slumping for some reason, it would be inward-posing no threat to spillage.

The front slope of the east dike is considerably steeper than the angle or repose, but the stacked barrels have performed the action of an unreinforced retaining wall. If at some location this retaining action failed, and the front slope of this dike would slump to a stable angle, this slumping action would occur as the top part of the dike essentially falling out over the lower section until loose stability is obtained. I anticipate no more than a 10 to 15 foot width of the crown will be displaced. Since the crown of the east dike is 25 feet wide, there will be no loss in elevation of the retaining structure for the ash.

It is also possible that a deep slide can occur with movement of a large mass of the fill. Experience has shown that this action is essentially the rotation of a circular section until enough of the lower portion is pushed out to balance the shear resistance on the sliding plane and the reduced driving forces of the upper portion.

In other words this failure is never a total displacement but a sinking of the upper portion along the sliding plane. To determine the factor of safety of the full height of the dikes I have performed two Swedish Circle analyses (Figures 2 and 3). The F.S. values of both circles is approximately 2.0, which is more than is commonly used in designed slopes. I do not anticipate a deep slide anywhere in the dike area. However once again, if such a slide did occur, I anticipate the crown will drop down only about 5 feet before balance is reestablished.

In summary therefore it is my conclusion that neither slumping nor deep sliding will occur in the dikes on either side, and if they did occur, there would be a loss in crown elevation of no more than 5 feet.

RECOMMENDATION

My recommendation for the order of excavation is to first remove a five-foot deep horizontal layer of the waste material away from the dikes for a distance of 25 feet. After this action the excavation of the ash pit can proceed in any manner desired for maximum efficiency.

The above are my conclusions and recommendation. If there are any comments and questions, please advise.

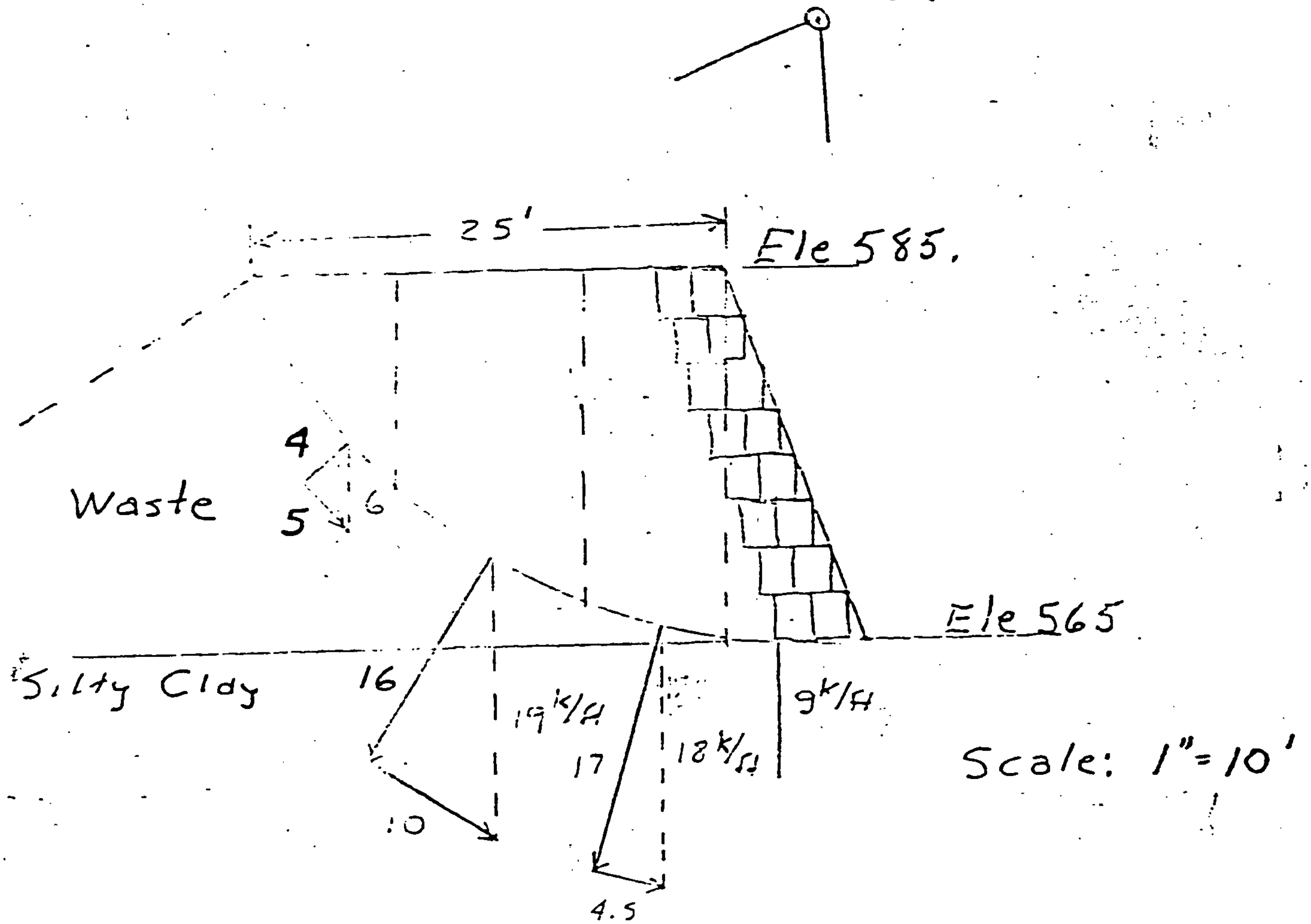
Very truly yours,

Cecil H. Smith, P.E.

SLOUGHING OF FREE SURFACE
(stability)

$$F.S. = \frac{\tan \phi}{\tan \beta} = \frac{\tan 40^\circ}{\tan 32^\circ} = 1.34$$

EAST DIKE
(stability)



Driving Forces = 5 + 10 + 4.5 = 19.5 k/ft

Resisting Forces = (4 + 16 + 17 + 9) tan 40° = 38.6 k/ft

$$F.S. = \frac{38.6}{19.5} = 1.98$$

Figure 3

(Foundry Sand)

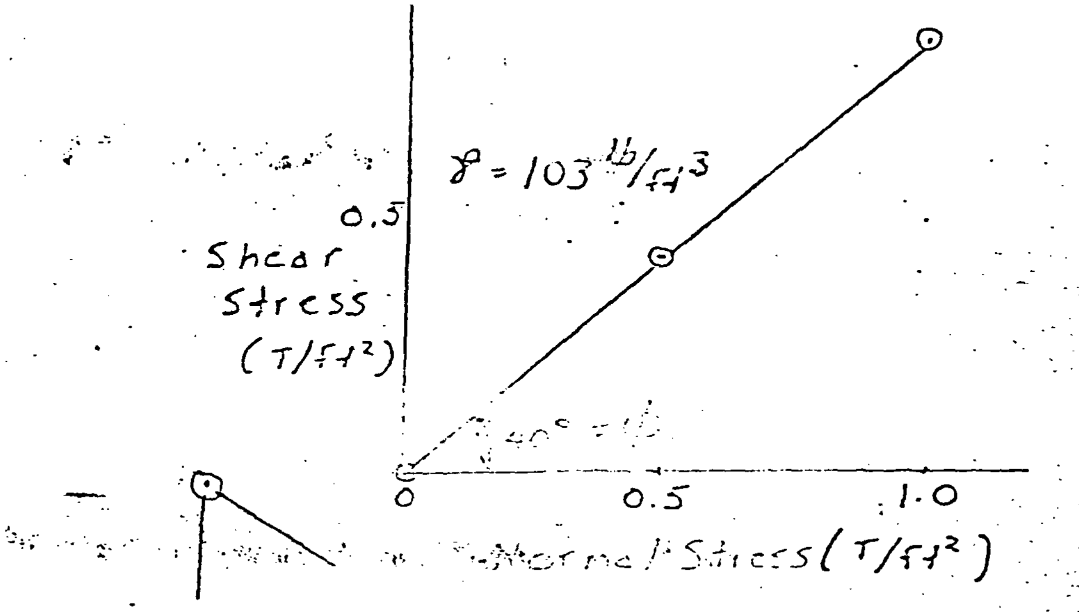
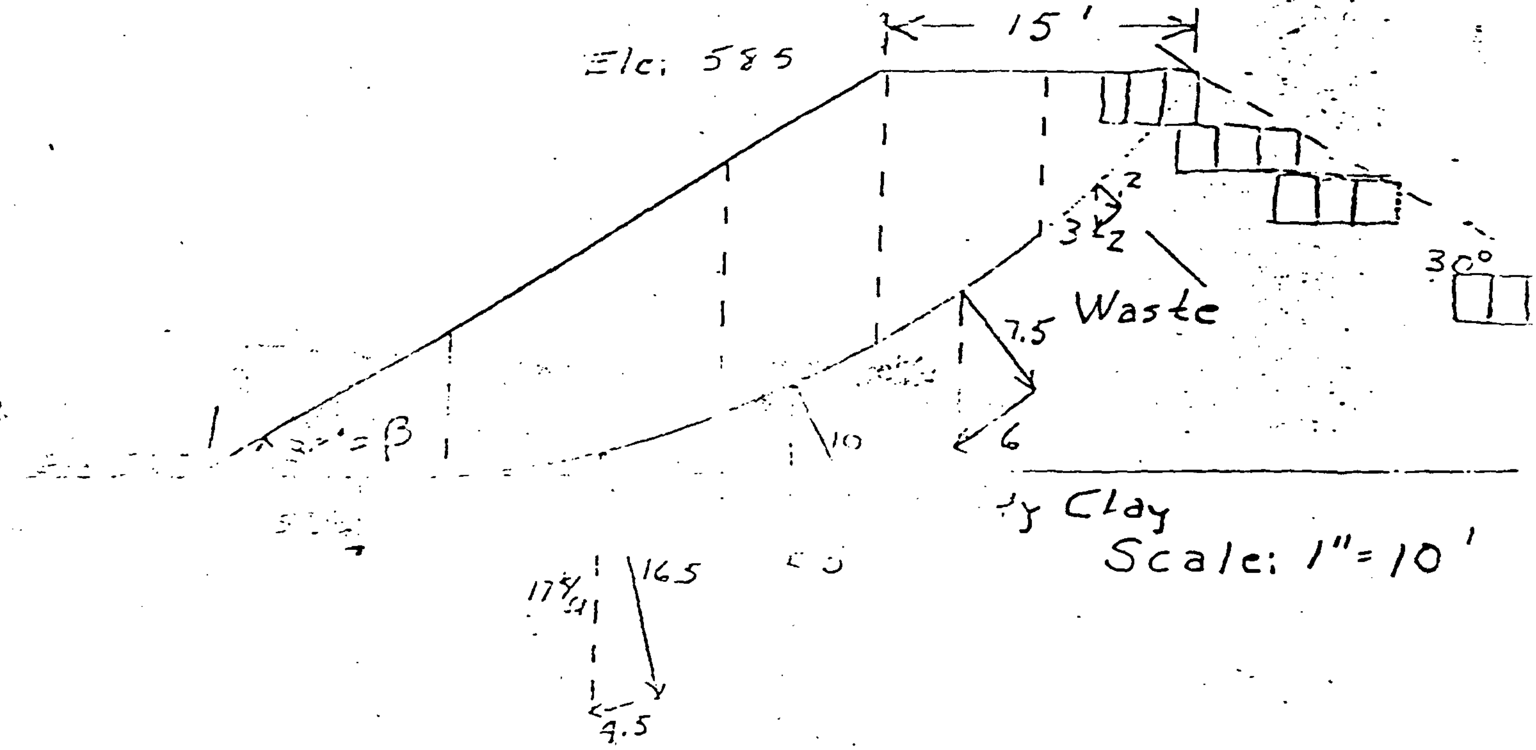


Figure 1

SOUTH DIKE
(Stability)



Driving Forces = 4.5 + 5 + 6 + 2 = 17.5 k/ft

Resisting Force = (5 [illegible] + 7.5 + 2) tan 40° = 34.4

$$FS = \frac{34.4}{17.5} = 1.97$$

Figure 2

(21) Appendix I, C. Smith, p.2:

On page 2 of his December 8, 1984 letter to E. L. Barnhart, Dr. Smith does not describe what type(s) of "foundry waste" is used as fill behind the stacked barrels. Please describe the composition of this fill (i.e. approximate percent slag, scrap iron, sand, other).

(22) Appendix I, C. Smith, p.2:

The letter states that a "majority" of the grains from the foundry sand sample passed the #4 sieve and were retained on the #40 sieve. Please be more specific as to actual percentages. Also, please describe the composition of the material which did not pass the #4 sieve (e.g. slag chips, pebbles, etc.).

(23) Appendix I, C. Smith, pages 2-3:

Stability calculations using the Swedish Method of Slices, such as those submitted in Dr. Smith's report, can determine the factor of safety against sliding along a specified circular slip surface. However, no demonstration was presented that the arbitrary trial slip surface used in the calculations is the critical curve. Another slip surface could have a substantially lower factor of safety. If TVISC plans to continue this demonstration, one of the widely available iterative computer programs which can find the most critical surface should be used. In addition, the angle of internal friction and cohesion would be determined by triaxial testing for representative samples of each type of waste and fill material. Because the spatial placement of materials in the landfill is not well documented, the stability analyses should assume that the weakest material in the landfill is at the slip surface.

(24) Appendix I, C. Smith, page 3:

Dr. Smith points out that although the "front slope of the east dike is considerably steeper than the angle of repose" -- his Figure 3 depicts it as 70° -- "the stacked barrels have performed the action of an unreinforced retaining wall." A December 12, 1984 site inspection by Christopher Swan and Robert Sherrill of TDWR revealed, however, that the slag barrel wall shows signs of instability as the sand has eroded between the barrels and he wall appears to bow outward in the middle. At the same inspection it was noted that five (5) drums containing slag had fallen off the slag barrel wall into the creek.

Dr. Smith states that if "at some location this retaining action [of the wall] failed, and the front slope of this dike would slump to a stable angle, this slumping action would occur as the top part of the dike essentially falling out over the lower section until loose stability is obtained." Should this occur, please describe the measures TVISC would take to ensure that no release of waste material into the environment would occur.

(25) Appendix I, C. Smith, page 3:

Dr. Smith states that the angle of internal friction for the foundry fill sand sample was found to be 40°. He concludes that the interior slopes of the south and east dikes, which were "found to be less than 40°," will not experience surface slumping. However, Figure 3 of the main report depicts a portion of the exterior of the south dike to have an angle of approximately 51°, and this same figure shows slopes for the inside of both dikes to be as steep as 60° in places. In fact, at no point are they depicted as being "less than 40°," as described in Dr. Smith's report. Please explain this discrepancy, and provide any field measurements which were used to construct the cross-sectional diagrams used by Dr. Smith in his calculations.

(26) Appendix I, C. Smith, page 4:

Please elaborate on and explain Dr. Smith's suggestion to "remove a five-foot deep horizontal layer of waste material away from the dikes for a distance of 25 feet," and explain which waste material he is referring to (i.e. only the dust, or a dust/sand mixture, etc.).

(27) Appendix I, C. Smith, page 4:

Please provide the methods and calculations which were used to determine that if "a slide did occur, ... the crown will drop only about 5 feet before balance is reestablished."

April 1, 1985

Mr. Edwin L. Barnhart,
President
ELBA, Inc.
852 Marsh Dunes Road
Fripp Island, S. C. 29920

Dear Ed:

This is in reply to the questions posed in the letter from the Texas Department of Water Resources dated 5 March 1985, regarding the Trinity Valley Iron & Steel Company's land fill.

Question 21: The "Foundry Waste" behind the stacked barrels that forms the dikes is composed of sand, black binder material, chunks of scrap iron, and broken mold material. It is not the bag house dust.

Questions 22, 23, 24, 25, 26, 27: These questions address themselves to the composition of the material sample used as a specimen to obtain the Coulomb strength property for the dike, the suitability of the strength test used, and the adequacy of the stability conclusions.

The material of the dikes is black waste from the molding process. It is primarily foundry sand and the binder material used for the molding. There are of course chunks of scrap within the main mass: mold pieces scrap metal, etc., but there was no slag or bag house dust in the samples we collected.

As the grain size of a granular material increases so does its angle of internal friction. We deliberately separated out the coarser chunks from the specimen used in the shear test in order to obtain a conservative angle of friction. The specimen used was then entirely the black

CIVIL AND MECHANICAL ENGINEERING DEPARTMENT (214) 692-3128
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
SOUTHERN METHODIST UNIVERSITY / DALLAS, TEXAS 75275

foundry sand. Eighteen percent passed the #40 sieve. We feel a detailed sieve analysis of any sample of this heterogeneous material would represent only the sample.

We do not agree that the triaxial test is superior to the direct shear test in this case. The direct shear results are always more conservative than triaxial results. For our tests the material was poured loose into the chamber and consolidated under only the weight of the normal stress. The specimen obtained by this method is more homogeneous than can be obtained by packing in a triaxial mold.

The slopes for the dikes used in the stability analysis were taken from the topographic survey by Carter and Burgess dated 5 December 1984. It is true that other sliding circles will give a lower factor of safety - see supplementary analysis attached. However the key consideration is not whether a failure can occur which will require some remedy by the Company, but whether a failure can occur that will allow loss of the bag house dust to the surroundings. Only a slide as shown in Figure 3 of the initial report can cause spillage of the bag house dust behind the dike. On the supplemental analysis is drawn a 40° "angle of repose" which can result if the retaining wall fails. This poses no threat to the dust on the inside of the dike.

The five foot drop in the crown of the slide in Figure 3 was a conservative estimate of the possible final shape of the slide should it occur. Figure 3 (supplement) shows its probable final shape. Again is imposed the 40° angle of repose; flatter than which this slope cannot go. For added safety we recommended that the bag house dust be removed to a depth 5' below the dike crown for a distance of 25' back from the dike.

Very truly yours,

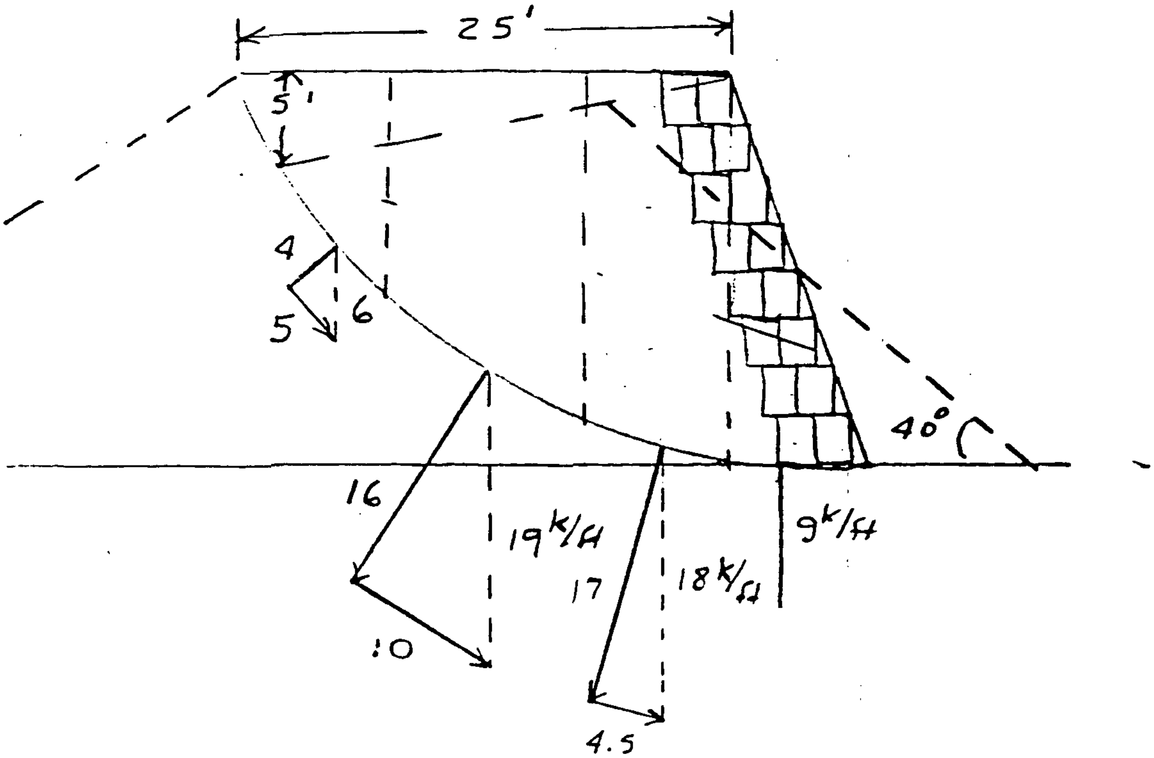
Cecil H. Smith

Cecil H. Smith

Attachment

EAST DIKE
(Stability)

①



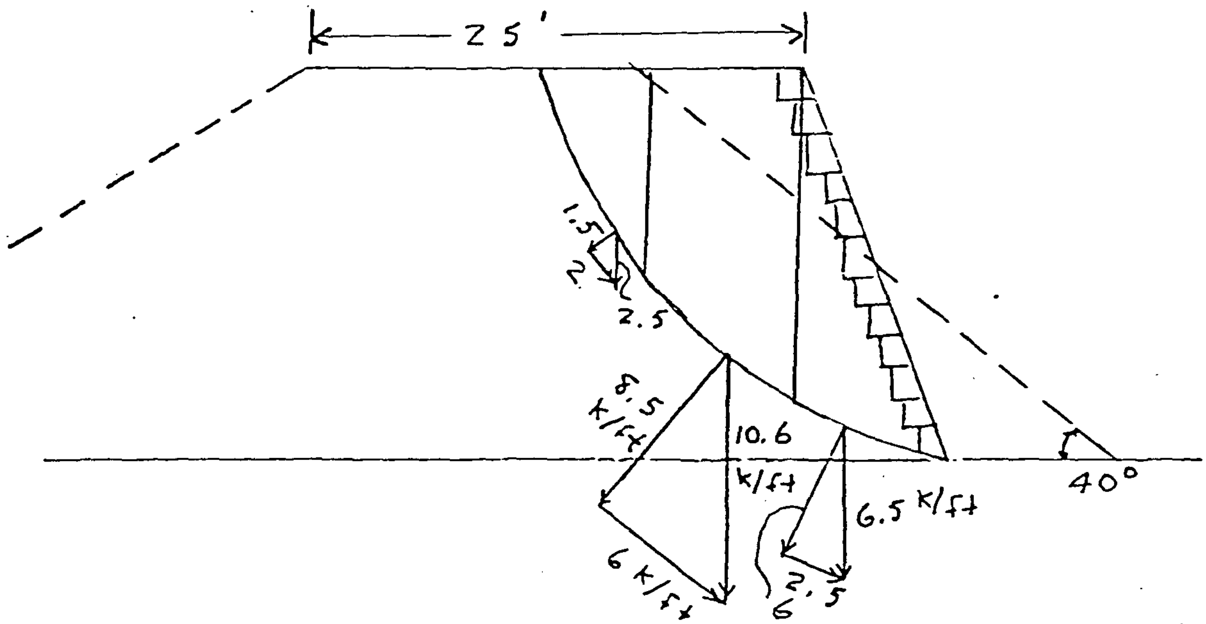
Driving Forces = 5 + 10 + 4.5 = 19.5 k/ft

Resisting Forces = (4 + 16 + 17 + 9) tan 40° = 38.6 k/ft

$$F.S. = \frac{38.6}{19.5} = 1.98$$

Figure 3
(Supplement)

EAST DIKE
(Stability)



Driving Forces = 2 + 6 + 2.5 = 10.5 k/ft

Resisting Forces = (1.5 + 8.5 + 6) tan 40°
= 13.4

$$F.S. = \frac{13.4}{10.5} = 1.28$$

Appendix 2

ANALYSIS OF GROUND WATER TEST WELLS

TALEM, INC.
820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 4-16-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 3-28-84

Identification: Monitoring Wells

Collected by: TALEM personnel

Depth	Well #4, 27'	Well #1, 33'	Well #2, 31'	Well #3, 32'
Sulfate (mg/L turbidimetric method, Std. Methods, 15th ed. p. 439)	66	80	59	6
pH (Std. Units, glass electrode method, Std. Methods, 15th ed. p. 402)	7.2 7.2 7.2 7.2	7.1	7.2	7.4
Specific Conductance (conductivity meter method, Std. Methods, 15th ed. p. 70)	490 490 490 490	750	490	490
TOC (mg/L ampule dichromate method, Std. Methods, 15th ed. p. 471)	108 107 106 107	104	109	80
Total Organic Halogen (ug/L EPA Method 9020, Test Methods for Evaluating Solid Waste, Physical/Chemical Meth. SW846, 2nd Ed., USEPA 1982)	60.6 61.2 53.8 54.6	58.6	44.6	81.4

TALEM, Inc.

Per: Robert Taylor

Distribution of Report:

Trinity Valley Iron & Steel

TALEM, INC.
820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
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Identification: Monitoring Wells

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Radium, (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross alpha (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross beta (pCi/L, Scintillation Counter Method	<1	<1	<1	<1
Coliform, (no/100 ml, membrane filter, Std. Methods, 15th ed. p. 806)	<1	<1	<1	<1
Chlorides (mg/L Silver nitrate titrimetric method, Std. Meth. 15th ed. p. 270)	371	458	436	567
Iron, (mg/L total, digestion followed by atomic absorp. EPA Methods 236.1)	0.52	0.82	1.50	1.20
Manganese (mg/L, total, digestion followed by atomic absorp. EPA Methods 243.1)	<0.05	0.53	2.8	0.52
Phenols (mg/L, distillation followed by direct photometric method, Std. Meth. 15th ed. p. 513, EPA 420.2)	<0.1	<0.1	<0.1	<0.1
Sodium, (mg/L atomic absorp. EPA Methods 273.1)	59	82	28	26

TALEM, Inc.

Per: Robert Taylor
Robert Taylor

Distribution of Report:

Trinity Valley Iron & Steel

TALEM, INC.
820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 4-16-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 3-28-84

Identification: Monitoring Wells

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Selenium, (mg/L total, digestion followed by atomic absorp. EPA Methods 270.3-1)	<0.01	<0.01	<0.01	<0.01
Silver, (mg/L total, digestion followed by atomic absorp. EPA Methods 272.1)	<0.05	<0.05	<0.05	<0.05
Endrin, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.0002	<0.0002	<0.0002	<0.0002
Lindane, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.004	<0.004	<0.004	<0.004
Methoxychlor, (mg/L Method 509A, Std. Methods, 15th ed. p. 198)	<0.1	<0.1	<0.1	<0.1
Toxaphene (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.005	<0.005	<0.005	<0.005
2,4-D, (mg/L Method 509B, Std. Methods, 15th ed.)	<0.1	<0.1	<0.1	<0.1
2,4, 5-TP Silvex (mg/L Method 509B, Std. Method, 15th ed.)	<0.01	<0.01	<0.01	<0.01

TALEM, Inc.

Per: Robert Taylor
Robert Taylor

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Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 4-16-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 3-28-84

Identification: Monitoring Wells

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Depth	27'	33'	31'	32'
Arsenic, (mg/L total, digestion followed by atomic absorp. EPA Methods 206.3-1)	<0.01	<0.01	<0.01	<0.01
Barium, (mg/L total, digestion followed by atomic absorp. EPA Methods 208.1)	<0.5	<0.5	<0.5	<0.5
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.1)	<0.02	<0.02	0.03	<0.02
Chromium, (mg/L total, digestion followed by atomic absorp. EPA Methods 218.1)	<0.1	<0.1	<0.1	<0.1
Fluoride, (mg/L direct SPADNS Std. Methods, 15th ed. p. 337)	0.65	0.52	0.58	0.45
Lead, (mg/L total, digestion followed by atomic absorp. EPA Methods 239.1)	<0.5	<0.5	<0.5	<0.5
Mercury, (mg/L total, digestion followed by atomic absorp. EPA Methods 245.2)	<0.01	<0.01	<0.01	<0.01
Nitrate (mg/L as N Cadmium reduction, Std. Methods, 15th ed. p. 370)	6.8	0.4	0.44	0.52

TALEM, Inc.
Per: Robert Taylor
Robert Taylor

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Trinity Valley Iron & Steel

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820 Business Park
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Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 1-13-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 11-11-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Sulfate (mg/L turbidimetric method, Std. Methods, 15th ed. p. 439)	170	6	36	150
pH (Std. Units, glass electrode method, Std. Methods, 15th ed. p. 402)	7.1 7.1 7.1 7.1	7.5	7.2	7.2
Specific Conductance (conductivity meter method, Std. Methods, 15th ed. p. 70)	700 700 700 700	650	750	1050
TOC (mg/L ampule dichromate method, Std. Methods, 15th ed. p. 471)	122 123 118 118	101	112	120
Total Organic Halogen (ug/L EPA Method 9020, Test Methods for Evaluating Solid Waste, Physical/Chemical Meth. SW846, 2nd Ed., USEPA 1982)	17.0 17.5 17.3 18.1	13.2	18.3	11.7

Distribution of Report:
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TALEM, Inc.
Per Robert Taylor
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Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 1-13-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 11-11-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Arsenic, (mg/L total, digestion followed by atomic absorp. EPA Methods 206.3-1)	<0.01	<0.01	<0.01	<0.01
Barium, (mg/L total, digestion followed by atomic absorp. EPA Methods 208.1)	<0.5	<0.5	<0.5	<0.5
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.1)	<0.02	0.03	<0.02	0.03
Chromium, (mg/L total, digestion followed by atomic absorp. EPA Methods 218.1)	<0.1	<0.1	<0.1	<0.1
Fluoride, (mg/L direct SPADNS Std. Methods, 15th ed. p. 337)	0.32	0.48	0.32	0.62
Lead, (mg/L total, digestion followed by atomic absorp. EPA Methods 239.1)	<0.1	<0.1	<0.1	<0.1
Mercury, (mg/L total, digestion followed by atomic absorp. EPA Methods 245.2)	<0.01	<0.01	<0.01	<0.01
Nitrate (mg/L as N Cadmium reduction, Std. Methods, 15th ed. p. 370)	1.7	0.4	0.29	0.40

TALEM, Inc.

Per: Robert Taylor
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Date of Report: 1-13-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 11-11-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Arsenic, (mg/L total, digestion followed by atomic absorp. EPA Methods 206.3-1)	<0.01	<0.01	<0.01	<0.01
Barium, (mg/L total, digestion followed by atomic absorp. EPA Methods 208.1)	<0.5	<0.5	<0.5	<0.5
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.1)	<0.02	0.03	<0.02	0.03
Chromium, (mg/L total, digestion followed by atomic absorp. EPA Methods 218.1)	<0.1	<0.1	<0.1	<0.1
Fluoride, (mg/L direct SPADNS Std. Methods, 15th ed. p. 337)	0.32	0.48	0.32	0.62
Lead, (mg/L total, digestion followed by atomic absorp. EPA Methods 239.1)	<0.1	<0.1	<0.1	<0.1
Mercury, (mg/L total, digestion followed by atomic absorp. EPA Methods 245.2)	<0.01	<0.01	<0.01	<0.01
Nitrate (mg/L as N Cadmium reduction, Std. Methods, 15th ed. p. 370)	1.7	0.4	0.29	0.40

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Date of Report: 1-13-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 11-11-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Radium, (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross alpha (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross beta (pCi/L, Scintillation Counter Method	<1	<1	<1	<1
Coliform, (no/100 ml, membrane filter, Std. Methods, 15th ed. p. 806)	<10	<10	<10	<10
Chlorides (mg/L Silver nitrate titrimetric method, Std. Meth. 15th ed. p. 270)	44	71	46	119
Iron, (mg/L total, digestion followed by atomic absorp. EPA Methods 236.1)	0.72	1.7	3.6	3.4
Manganese (mg/L, total, digestion followed by atomic absorp. EPA Methods 243.1)	<0.05	0.50	0.22	0.56
Phenols (mg/L, distillation followed by direct photometric method, Std. Meth. 15th ed. p. 513, EPA 420.2)	<0.1	<0.1	<0.1	<0.1
Sodium, (mg/L atomic absorp. EPA Methods 273.1)	80	49	75	137

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Fort Worth, Texas 76101

Date of Report: 1-13-84

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 11-11-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Selenium, (mg/L total, digestion followed by atomic absorp. EPA Methods 270.3-1)	<0.01	<0.01	<0.01	<0.01
Silver, (mg/L total, digestion followed by atomic absorp. EPA Methods 272.1)	<0.05	<0.05	<0.05	<0.05
Endrin, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.0002	<0.0002	<0.0002	<0.0002
Lindane, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.004	<0.004	<0.004	<0.004
Methoxychlor, (mg/L Method 509A, Std. Methods, 15th ed. p. 198)	<0.1	<0.1	<0.1	<0.1
Toxaphene (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.005	<0.005	<0.005	<0.005
2,4-D, (mg/L Method 509B, Std. Methods, 15th ed.)	<0.1	<0.1	<0.1	<0.1
2,4, 5-TP Silvex (mg/L Method 509B, Std. Method, 15th ed.)	<0.01	<0.01	<0.01	<0.01

TALEM, Inc.

Per: Robert Taylor

Distribution of Report:

Trinity Valley Iron & Steel

TALEM,.INC.
820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 8-22-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 7-26-83

Identification: See Below

Collected by: TALEM personnel

Sulfate (mg/L turbidimetric method, Std. Methods, 15th ed. p. 439)	74.5	132	32.5	62.0
pH (Std. Units, glass electrode method, Std. Methods, 15th ed. p. 402)	6.6 6.6 6.6 6.6	6.6	7.0	7.0
Specific Conductance (conductivity meter method, Std. Methods, 15th ed. p. 70)	395 395 395 395	600	423	400
TOC (mg/L ampule dichromate method, Std. Methods, 15th ed. p. 471)	104 136 128 120	68.6	75.5	73.3
Total Organic Halogen (ug/L EPA Method 9020, Test Methods for Evaluating Solid Waste, Physical/Chemical Meth. SW846, 2nd Ed., USEPA 1982)	38.3 37.0 37.8 40.0	52.5	35.1	40.5

TALEM, Inc.
Per: Robert Taylor
Robert Taylor

Distribution of Report:
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820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron & Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 8-22-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 7-26-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Arsenic, (mg/L total, digestion followed by atomic absorp. EPA Methods 206.3-1)	<0.01	<0.01	<0.01	<0.01
Barium, (mg/L total, digestion followed by atomic absorp. EPA Methods 208.1)	14.7	15.9	12.5	12.8
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.1)	0.03	0.03	---	0.03
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.2)	---	---	<0.01	---
Chromium, (mg/L total, digestion followed by atomic absorp. EPA Methods 218.2)	<0.05	<0.05	0.06	0.55
Fluoride, (mg/L direct SPADNS Std. Methods, 15th ed. p. 337)	0.16	0.18	0.16	0.16
Lead, (mg/L total, digestion followed by atomic absorp. EPA Methods 239.2)	<0.05	<0.05	<0.05	<0.05
Mercury, (mg/L total, digestion followed by atomic absorp. EPA Methods 245.2)	<0.002	<0.002	<0.002	<0.002
Nitrate (mg/L as N Cadmium reduction, Std. Methods, 15th ed. p. 370)	0.4	0.4	0.08	0.14

TALEM, Inc.
Per: Robert Taylor

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820 Business Park
2818 S.E. Loop 820
Fort Worth, Texas 76140
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P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 8-22-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 7-26-83

Identification: See Below

Collected by: TALEM personnel

Selenium, (mg/L total, digestion followed by atomic absorp. EPA Methods 270.3-1)	<0.01	<0.01	<0.01	<0.01
Silver, (mg/L total, digestion followed by atomic absorp. EPA Methods 272.1)	<0.05	<0.05	<0.05	<0.05
Endrin, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.0002	<0.0002	<0.0002	<0.0002
Lindane, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.004	<0.004	<0.004	<0.004
Methoxychlor, (mg/L Method 509A, Std. Methods, 15th ed. p. 198)	<0.01	<0.01	<0.01	<0.01
Toxaphene (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.005	<0.005	<0.005	<0.005
2,4-D, (mg/L Method 509B, Std. Methods, 15th ed.)	<0.1	<0.1	<0.1	<0.1
2,4, 5-TP Silvex (mg/L Method 509B, Std. Method, 15th ed.)	<0.01	<0.01	<0.01	<0.01

TALEM, Inc.

Per Robert Taylor

Robert Taylor

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Date of Report: 8-22-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 7-26-83

Identification: See Below

Collected by: TALEM personnel

Radium, (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross alpha (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross beta (pCi/L, Scintillation Counter Method	<1	<1	<1	<1
Coliform, (no/100 ml, membrane filter, Std. Methods, 15th ed. p. 806)	44	26	32	27
Chlorides (mg/L Silver nitrate titrimetric method, Std. Meth. 15th ed. p. 270)	47	119	46	72
Iron, (mg/L total, digestion followed by atomic absorp. EPA Methods 236.1)	1.20	0.53	3.70	1.50
Manganese (mg/L, total, digestion followed by atomic absorp. EPA Methods 243.1)	<0.05	0.40	0.40	0.18
Phenols (mg/L, distillation followed by direct photometric method, Std. Meth. 15th ed. p. 513, EPA 420.2)	<0.1	<0.1	<0.1	<0.1
Sodium, (mg/L atomic absorp. EPA Methods 273.1)	40.5	60.0	239	97.6

TALEM, Inc.
Per: Robert Taylor

Distribution of Report:
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820 Business Park
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Fort Worth, Texas 76140
817/293-4426 817/572-1751

Reported to: Trinity Valley Iron and Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 7-25-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 4-26-83

Identification: See Below

Collected by: TALEM personnel

		w1	w2	w3
Sulfate (mg/L turbidimetric method, Std. Methods, 15th ed. p. 439)	113	190	103	82
pH (Std. Units, glass electrode method, Std. Methods, 15th ed. p. 402)	7.10 7.05 7.05 7.05	6.65	7.05	7.15
Specific Conductance (conductivity meter method, Std. Methods, 15th ed. p. 70)	900 900 900 875	1500	900	825
TOC (mg/L ampule dichromate method, Std. Methods, 15th ed. p. 471)	14 15 15 17	50	36	13
Total Organic Halogen (µg/L EPA Method 9020, Test Methods for Evaluating Solid Waste, Physical/Chemical Meth. SW846, 2nd Ed., USEPA 1982)	19.2 20.7 22.2 20.6	25.1	38.5	18.8

TALEM, Inc.
Per: Robert Taylor
Robert Taylor

Distribution of Report:

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817/293-4426 817/572-1751

Reported to: Trinity Valley Iron and Steel
P. O. Box 2388
Fort Worth, Texas 76101

Date of Report: 7-25-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 4-26-83

Identification: See Below

Collected by: TALEM personnel

	Well #4	Well #1	Well #2	Well #3
Arsenic, (mg/L total, digestion followed by atomic absorp. EPA Methods 206.3-1)	<0.01	<0.01	<0.01	<0.01
Barium, (mg/L total, digestion followed by atomic absorp. EPA Methods 208.1)	<1.0	<1.0	1.6	<1.0
Cadmium, (mg/L total, digestion followed by atomic absorp. EPA Methods 213.1)	<0.01	<0.01	<0.01	<0.01
Chromium, (mg/L total, digestion followed by atomic absorp. EPA Methods 218.1)	<0.06	<0.01	<0.01	<0.06
Fluoride, (mg/L direct SPADNS Std. Methods, 15th ed. p. 337)	0.02	0.05	0.6	0.15
Lead, (mg/L total, digestion followed by atomic absorp. EPA Methods 239.1)	<0.1	<0.01	<0.1	<0.1
Mercury, (mg/L total, digestion followed by atomic absorp. EPA Methods 245.2)	<0.01	<0.01	<0.01	<0.01
Nitrate (mg/L as N Cadmium reduction, Std. Methods, 15th ed. p. 370)	0.945	0.65	0.05	0.40

TALEM, Inc.

Per Robert Taylor
Robert Taylor

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Fort Worth, Texas 76101

Date of Report: 7-25-83

Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 4-26-83

Identification: See Below

Collected by: TALEM personnel

Selenium, (mg/L total, digestion followed by atomic absorp. EPA Methods 270.3-1)	<0.01	<0.01	<0.01	<0.01	✓
Silver, (mg/L total, digestion followed by atomic absorp. EPA Methods 272.1)	<0.03	<0.03	<0.03	<0.03	✓
Endrin, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.0002	<0.0002	<0.0002	<0.0002	✓
Lindane, (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.004	<0.004	<0.004	<0.004	✓
Methoxychlor, (mg/L Method 509A, Std. Methods, 15th ed. p. 198)	<0.01	<0.01	<0.01	<0.01	✓
Toxaphene (mg/L EPA Method 608, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, USEPA, July 1982)	<0.005	<0.005	<0.005	<0.005	✓
2,4-D, (mg/L Method 509B, Std. Methods, 15th ed.)	<0.1	<0.1	<0.1	<0.1	✓
2,4, 5-TP Silvex (mg/L Method 509B, Std. Method, 15th ed.)	<0.01	<0.01	<0.01	<0.01	✓

TALEM, Inc.

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Date Received: 4-26-83

Identification: See Below

Collected by: TALEM personnel

Radium, (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross alpha (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross beta (pCi/L, Scintillation Counter Method	<1	<1	<1	<1
Coliform, (no/100 ml, membrane filter, Std. Methods, 15th ed. p. 806)	14	22	52	90
Chlorides (mg/L Silver nitrate titrimetric method, Std. Meth. 15th ed. p. 270)	62	148	83	52
✓ Iron, (mg/L total, digestion followed by atomic absorp. EPA Methods 236.1)	2.19	1.33	2.68	4.03
Manganese (mg/L, total, digestion followed by atomic absorp. EPA Methods 243.1)	0.21	0.86	1.0	0.08
✓ Phenols (mg/L, distillation followed by direct photometric method, Std. Meth. 15th ed. p. 513, EPA 420.2)	<0.1	<0.1	<0.1	<0.1
Sodium, (mg/L atomic absorp. EPA Methods 273.1)	109.4	153.3	104.6	113.8

TALEM, Inc.
Per: Robert Taylor

Distribution of Report:
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Lab Reference No.: 0432

Attention: Mr. Reed Lemons

Date Received: 4-26-83

Identification: See Below

Collected by: TALEM personnel

Radium, (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross alpha (pCi/L, Scintillation Counter Method)	<1	<1	<1	<1
Gross beta (pCi/L, Scintillation Counter Method	<1	<1	<1	<1
Coliform, (no/100 ml, membrane filter, Std. Methods, 15th ed. p. 806)	14	22	52	90
Chlorides (mg/L Silver nitrate titrimetric method, Std. Meth. 15th ed. p. 270)	62	148	83	52
✓ Iron, (mg/L total, digestion followed by atomic absorp. EPA Methods 236.1)	2.19	1.33	2.68	4.03
Manganese (mg/L, total, digestion followed by atomic absorp. EPA Methods 243.1)	0.21	0.86	1.0	0.08
✓ Phenols (mg/L, distillation followed by direct photometric method, Std. Meth. 15th ed. p. 513, EPA 420.2)	<0.1	<0.1	<0.1	<0.1
Sodium, (mg/L atomic absorp. EPA Methods 273.1)	109.4	153.3	104.6	113.8 ✓

TALEM, Inc.
Per: Robert Taylor

Distribution of Report:
Trinity Valley Iron and Steel

Attachment B

The Student's T-statistic is calculated by:

$$t = \frac{\left| \overline{X}_1 - \overline{X}_2 \right|}{\sqrt{\left(\frac{\Sigma(X_1 - \overline{X}_1)^2 + \Sigma(X_2 - \overline{X}_2)^2}{(N_1 - 1) + (N_2 - 1)}\right) \times \left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

Explanation of Terms

X_1, X_2 - These symbols stand for analyses obtained for the upgradient well (these are X_1 values) and the comparison well (these are X_2 values). You should note that there will be 16 X_1 values (obtained from upgradient wells during the first year of the RCRA groundwater monitoring program) and 4 X_2 values (comparison values for all monitoring wells in the system which are made in the second year and all succeeding years of the RCRA groundwater monitoring program).

$\overline{X}_1$, $\overline{X}_2$ - The averages (or sample means) of the X_1 values (the upgradient well) and X_2 values (the comparison well).

$\left| X_1 - X_2 \right|$ - The absolute value of the difference between the sample means $\overline{X}_1$ and $\overline{X}_2$. $\overline{X}_2$ is subtracted from $\overline{X}_1$. The absolute value of this operation (indicated by the vertical bars, $| \; |$) means that the number obtained from subtracting one sample average from another will always be positive.

Σ - Indicates that simple addition of a group of numbers is to be performed. For example: $\Sigma 4 + 3 + 2 = 9$

$(X_1 - \overline{X}_1)^2$ - This means that the average calculated for the data set compiled for the upgradient well is subtracted from one of the analysis values. After subtracting, the number obtained is then squared.

$\Sigma(X_1 - \overline{X}_1)^2$ - After the calculation is made as described above, the set of the numbers that is obtained is added. For the upgradient well, there will be sixteen $(X_1 - \overline{X}_1)^2$ values and four $(X_2 - \overline{X}_2)^2$ values.

N_1, N_2 - These are the total number of X_1 values (corresponds to N_1) and X_2 values (corresponds to N_2). For RCRA purposes, $N_1 = 16$ and $N_2 = 4$.

Table A-8

Distribution of t

Degrees of freedom ν	Probability α 0.10	0.05	0.01	0.001
1	6.314	12.706	63.657	636.619
2	2.920	4.303	9.925	31.598
3	2.353	3.182	5.841	12.941
4	2.132	2.776	4.604	8.610
5	2.015	2.571	4.032	6.859
6	1.943	2.447	3.707	5.959
7	1.895	2.365	3.499	5.405
8	1.860	2.306	3.355	5.041
9	1.833	2.262	3.250	4.781
10	1.812	2.228	3.169	4.587
11	1.796	2.201	3.106	4.437
12	1.782	2.179	3.055	4.318
13	1.771	2.160	3.012	4.221
14	1.761	2.145	2.977	4.140
15	1.753	2.131	2.947	4.073
16	1.746	2.120	2.921	4.015
17	1.740	2.110	2.898	3.965
18	1.734	2.101	2.878	3.922
19	1.729	2.093	2.861	3.883
20	1.725	2.086	2.845	3.850
21	1.721	2.080	2.831	3.819
22	1.717	2.074	2.819	3.792
23	1.714	2.069	2.807	3.767
24	1.711	2.064	2.797	3.745
25	1.708	2.060	2.787	3.725
26	1.706	2.056	2.779	3.707
27	1.703	2.052	2.771	3.690
28	1.701	2.048	2.763	3.674
29	1.699	2.045	2.756	3.659
30	1.697	2.042	2.750	3.646
40	1.684	2.021	2.704	3.551
60	1.671	2.000	2.660	3.460
120	1.658	1.980	2.617	3.373
∞	1.645	1.960	2.576	3.291

This table gives the values of t corresponding to various values of the probability α (level of significance) of a random variable falling inside the shaded areas in the figure, for a given number of degrees of freedom ν available for the estimation of error. For a one-sided test the confidence limits are obtained for $\alpha/2$.

This table is taken from Table III of Fisher and Yates, *Statistical Tables for Biological, Agricultural, and Medical Research*, published by Oliver & Boyd Ltd., Edinburgh, Scotland, by permission of the authors and publishers.

One Tail

Table IV

VALUES OF t_α*

ν	$\alpha = 0.10$	$\alpha = 0.05$	$\alpha = 0.025$	$\alpha = 0.01$	$\alpha = 0.005$	ν
1	3.078	6.314	12.706	31.821	63.657	1
2	1.886	2.920	4.303	6.965	9.925	2
3	1.638	2.353	3.182	4.541	5.841	3
4	1.533	2.132	2.776	3.747	4.604	4
5	1.476	2.015	2.571	3.365	4.032	5
6	1.440	1.943	2.447	3.143	3.707	6
7	1.415	1.895	2.365	2.998	3.499	7
8	1.397	1.860	2.306	2.896	3.355	8
9	1.383	1.833	2.262	2.821	3.250	9
10	1.372	1.812	2.228	2.764	3.169	10
11	1.363	1.796	2.201	2.718	3.106	11
12	1.356	1.782	2.179	2.681	3.055	12
13	1.350	1.771	2.160	2.650	3.012	13
14	1.345	1.761	2.145	2.624	2.977	14
15	1.341	1.753	2.131	2.602	2.947	15
16	1.337	1.746	2.120	2.583	2.921	16
17	1.333	1.740	2.110	2.567	2.898	17
18	1.330	1.734	2.101	2.552	2.878	18
19	1.328	1.729	2.093	2.539	2.861	19
20	1.325	1.725	2.086	2.528	2.845	20
21	1.323	1.721	2.080	2.518	2.831	21
22	1.321	1.717	2.074	2.508	2.819	22
23	1.319	1.714	2.069	2.500	2.807	23
24	1.318	1.711	2.064	2.492	2.797	24
25	1.316	1.708	2.060	2.485	2.787	25
26	1.315	1.706	2.056	2.479	2.779	26
27	1.314	1.703	2.052	2.473	2.771	27
28	1.313	1.701	2.048	2.467	2.763	28
29	1.311	1.699	2.045	2.462	2.756	29
inf.	1.282	1.645	1.960	2.326	2.576	inf.

* This table is abridged from Table IV of R. A. Fisher, *Statistical Methods for Research Workers*, published by Oliver and Boyd, Ltd., Edinburgh, by permission of the author and publishers.

TRINITY VALLEY IRON & STEEL

HAND CALCULATION - 'T' test

TOC Well #2

UPGRADIENT WELL

Date	N	X_1	$X_1 - \bar{X}_1$	$(X_1 - \bar{X}_1)^2$
4-26-83	1	14	77	5929
	2	15	76	5776
	3	15	76	5776
	4	17	74	5476
7-26-83	5	104	-13	169
	6	136	-45	2025
	7	128	-37	1369
	8	120	-29	841
11-11-83	9	122	-31	961
	10	123	-32	1024
	11	118	-27	729
	12	118	-27	729
3-28-84	13	108	-17	289
	14	107	-16	256
	15	106	-15	225
	16	107	-16	256
		Σ 1458		31830

$$\bar{X}_1 = \frac{1458}{16} = 91$$

TVI#5 - TOC - T test Cont

For Well #1

Date	N	X^2	$X_2 - \bar{X}_2$	$(X_2 - \bar{X}_2)^2$
4-26-83	1	50	30.9	955
7-26-83	2	68.6	12.3	151
11-11-83	3	101	-20.1	404
3-28-84	4	104	-23.1	534
	Σ	323.6		2043

$$\bar{X}^2 = \frac{323.6}{4} = 80.9$$

$$t = \frac{(91.1) - (80.9)}{\sqrt{\frac{31830+2043}{15+3} \times \frac{16+4}{16 \times 4}}} = \frac{10.2}{24.2}$$

$$= 0.42$$

T value @ $\alpha = 0.01$ = 2.55

2.55 > 0.42 — No Significant Difference

Copied From Oct 84 Work!

SUMMARY OF RAW DATA USED FOR ANALYSIS well # I

REFERENCE WELL DATA: 0 -

	7.1	7.05	7.05	7.05
6.6	6.6	6.6	6.6	7.1
7.1	7.1	7.1	7.2	7.2
7.2	7.2			

OMPARISON WELL DATA: 1 -PH

	7.05	7	7.2	7.2

EFERENCE WELL DATA: 0 -

	900	900	900	875
395	395	395	395	700
700	700	700	490	490
490	490			

OMPARISON WELL DATA: 2 -SC

	900	423	750	490

EFERENCE WELL DATA: 0 -

	14	15	15	17
104	136	128	120	122
123	118	118	108	107
106	107			

OMPARISON WELL DATA: 3 -TOC

	36	75.5	112	109

EFERENCE WELL DATA: 0 -

	19.2	20.7	22.2	20.6
38.3	37	37.8	40	17
17.5	17.3	18.1	60.6	61.2
53.8	54.6			

OMPARISON WELL DATA: 4 -TOH

	38.5	35.1	18.3	44.6

SUMMARY OF STATISTICAL COMPUTATIONS

ELL TYPE / RAMETER	AVERAGE	SAMPLE VARIANCE	SAMPLE STD.DEV.
EFERENCE	6.990625	5.707286E-02	.2388993
MPARISON H	7.1125	1.062453E-02	.1030754
FERENCE	619.6875	39728.23	199.3194
OMPARISON	640.75	49762.25	223.0746
EFERENCE	91.125	2121.984	46.06499
MPARISON OC	83.125	1260.729	35.50675
FERENCE	33.49375	276.354	16.6239
OMPARISON	34.125	126.7492	11.25829

STUDENT T STATISTICS

PARAMETER	T STATISTIC	DEGREES OF FREEDOM
	.9815844	18
	.1851748	18
	.3217388	18
	7.121575E-02	18

SUMMARY OF RAW DATA USED FOR ANALYSIS WELL #2

REFERENCE WELL DATA: 1 -PH

	7.1	7.05	7.05	7.05
6.6	6.6	6.6	6.6	7.1
7.1	7.1	7.1	7.2	7.2
7.2	7.2			

COMPARISON WELL DATA: 1 -PH

	6.65	6.6	7.5	7.1

REFERENCE WELL DATA: 2 -SC

	900	900	900	875
395	395	395	395	700
700	700	700	490	490
490	490			

COMPARISON WELL DATA: 2 -SC

	1500	600	650	750

REFERENCE WELL DATA: 3 -TOC

	14	15	15	17
104	136	128	120	122
123	118	118	108	107
106	107			

COMPARISON WELL DATA: 3 -TOC

	50	68.6	101	104

REFERENCE WELL DATA: 4 -TOH

	19.2	20.7	22.2	20.6
38.3	37	37.8	40	17
17.5	17.3	18.1	60.6	61.2
53.8	54.6			

COMPARISON WELL DATA: 4 -TOH

	25.1	52.5	13.2	58.6

SUMMARY OF STATISTICAL COMPUTATIONS

WELL TYPE PARAMETER	AVERAGE	SAMPLE VARIANCE	SAMPLE STD.DEV.
REFERENCE PH	6.990625	5.707286E-02	.2388993
COMPARISON PH	6.9625	.1789579	.4230342
REFERENCE SC	619.6875	39728.23	199.3194
COMPARISON SC	875	177500	421.3075
REFERENCE TOC	91.125	2121.984	46.06499
COMPARISON TOC	80.9	681.2401	26.10058
REFERENCE TOH	33.49375	276.354	16.6239
COMPARISON TOH	37.35	471.4566	21.71305

STUDENT T STATISTICS

	PARAMETER	T STATISTIC	DEGREES OF FREEDOM
1	PH	.180856	18
2	SC	1.824094	18
3	TOC	.4216428	18
4	TOH	.3925108	18

...TE OF WELL + REC DATE OF WELL + REC DATE OF WELL + REC DATE OF WELL

SUMMARY OF RAW DATA USED FOR ANALYSIS Well # 3

REFERENCE WELL DATA: 1 -PH

	7.1	7.05	7.05	7.05
6.6	6.6	6.6	6.6	7.1
7.1	7.1	7.1	7.2	7.2
7.2	7.2			

COMPARISON WELL DATA: 1 -PH

	7.15	77	7.2	7.4

REFERENCE WELL DATA: 2 -SC

	900	900	900	875
395	395	395	395	700
700	700	700	490	490
490	490			

COMPARISON WELL DATA: 2 -SC

	825	400	1050	490

REFERENCE WELL DATA: 3 -TOC

	14	15	15	17
104	136	128	120	122
123	118	118	108	107
106	107			

COMPARISON WELL DATA: 3 -TOC

	13	73.3	120	80

REFERENCE WELL DATA: 4 -TOH

	19.2	20.7	22.2	20.6
38.3	37	37.8	40	17
17.5	17.3	18.1	60.6	61.2
53.8	54.6			

COMPARISON WELL DATA: 4 -TOH

	18.8	40.5	11.7	81.4

SUMMARY OF STATISTICAL COMPUTATIONS

WELL TYPE PARAMETER	AVERAGE	SAMPLE VARIANCE	SAMPLE STD.DEV.
REFERENCE PH	6.990625	5.707286E-02	.2388993
COMPARISON PH	24.6875	1216.277	34.87517
REFERENCE SC	619.6875	39728.23	199.3194
COMPARISON SC	691.25	90639.59	301.0641
REFERENCE TOC	91.125	2121.984	46.06499
COMPARISON TOC	71.57501	1949.989	44.15869
REFERENCE TOH	33.49375	276.354	16.6239
COMPARISON TOH	38.1	983.3666	31.35868

STUDENT T STATISTICS

	PARAMETER	T STATISTIC	DEGREES OF FREEDOM
1	PH	2.223207	18
2	SC	.5830105	18
3	TOC	.764371	18
4	TOH	.415021	18

Appendix 3

BORING LOGS AT SITES

Rone Engineers
Geotechnical Consultants
Materials Testing
1901 West Vickery
Fort Worth, Texas 76102
(817) 870-2000
From Dallas 429-4328

February 24, 1983

Mr. Gilbert R. Lemons
Trinity Valley Iron & Steel Co.
P.O. Box 2388
Fort Worth, Texas 76113

Re: Report 3-0506-01
Monitoring Well Installation
Trinity Valley Iron & Steel Co.
Fort Worth, Texas

Dear Mr. Lemons:

The following summarizes drilling and piezometer installation at the Trinity Valley Iron & Steel Company site in Fort Worth, Texas. On February 7, 1983, monitoring well installation was started at the above referenced site. Borings B-1 and B-2 were advanced to depths of 40 feet on this date and Piezometers #1 and #2 were installed in Borings B-1 and B-2, respectively. Boring B-3 was advanced on February 8, 1983 to a depth of 40 feet and Piezometer #3 was installed in the boring.

Boring B-4 was drilled on February 8, 1983 to a depth of 25 feet. Light gray limestone was encountered at a depth of 24 feet without indications of groundwater seepage in this boring. Because of the lack of ground water seepage, it was determined that Boring B-4 was unsuitable for piezometer installation.

On February 11, 1983, Messrs. Ed Barnhart of Southern Methodist University and Charles Jackson of Rone Engineers met with you on the site to determine a suitable location for the placement of the fourth piezometer. Boring B-5 was advanced on February 14, 1983 to a depth of 40 feet and Piezometer #4 was installed on this date. The locations of Borings B-1 through B-5 and the locations of the four piezometers are shown on Plate 1. A summary of the stratigraphy and groundwater seepage encountered in Borings B-1 through B-5 is also provided on Table 1.

The piezometers consisted of schedule 40 PVC pipe wrapped in a geotextile fabric filter media. A 36-inch long stainless steel well point was attached to the bottom of the PVC pipe. This well point was equipped with a "60 mesh" stainless steel screen. These piezometers were placed in the boreholes and backfilled with clean sand to approximately 5 feet from the ground surface. Approximately 2½ feet of bentonite was placed atop of the clean sand to act as a seal against surface water infiltration into the piezometer. A 6-inch diameter steel stand pipe was placed above the bentonite and sealed in place with concrete. These steel stand pipes stood approximately 6 inches above the PVC piezometer pipe. A locking cap was placed atop the steel stand pipes. The piezometer number was engraved in the concrete seal at the base of the stand pipe and also marked inside of the locking cap.

Rone Engineers appreciates the opportunity to assist you on this project. If any questions arise or if we can be of any further assistance, please contact us.

Yours very truly,

RONE ENGINEERS

Charles M. Jackson

Charles M. Jackson, P.E.
Senior Engineer

/kf

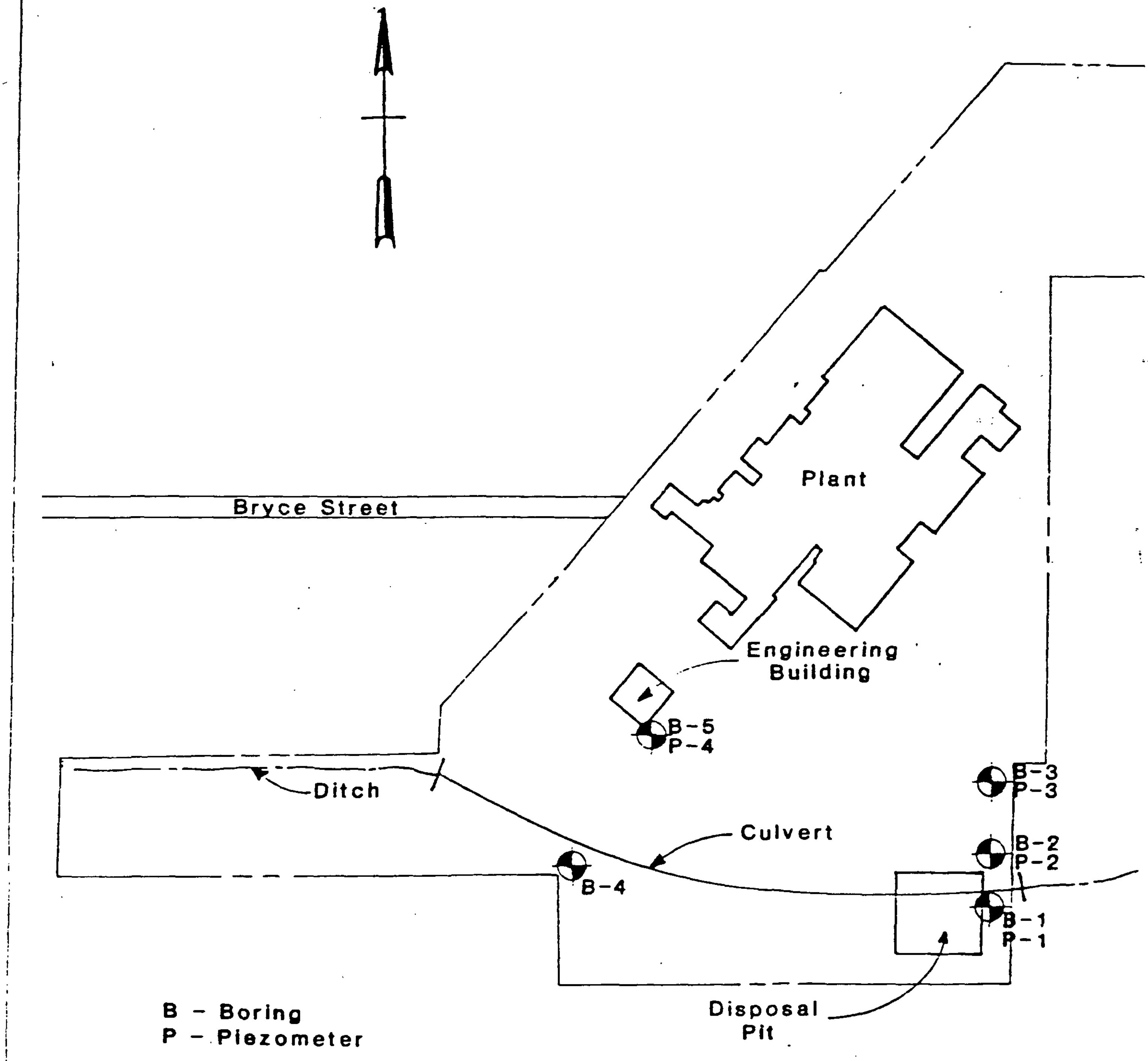
Attachments

3 copies submitted

TABLE 1

SUMMARY OF BORINGS

Boring Number	Depth (feet)	Material Description	Water Observations
B-1	0 - 20	Metal cinders	
	20 - 28	Dark grayish-brown sandy clay	
	28 - 30	Brown sandy clay	
	30 - 32	Dark brown & brown sandy clay	Seepage encountered at 32 feet
	32 - 40	Tan clayey sand	
B-2	0 - 21	Metal cinders	
	21 - 27	Dark grayish-brown sandy clay	
	27 - 31	Brown sandy clay	Seepage encountered at 31 feet
	31 - 40	Tan clayey sand	
B-3	0 - 22	Metal cinders	
	22 - 28	Dark grayish-brown sandy clay	
	28 - 31	Dark grayish-brown & brown sandy clay	Seepage encountered at 31 feet
	31 - 40	Tan clayey sand	
B-4	0 - 1	Brown sandy clay w/gravel	
	1 - 6	Reddish-brown sandy clay	
	6 - 15	Brown sandy clay w/occaional gravel	
	15 - 20	Tan sandy clay	
	20 - 24	Grayish-brown sandy clay	No seepage encountered in this boring
	24 - 25	Light gray limestone	
B-5	0 - 6	Metal cinders	
	6 - 7	Brown & tan sand	
	7 - 11	Brown sandy clay	
	11 - 38	Tan sandy clay	Seepage encountered at 30½ feet
	38 - 40	Tan sandy clay w/gravel	



Plan of Borings

Project
Trinity Valley Iron & Steel Co.

Scale	Date	Drawn By	
1" = 200'	02-24-83	JEL	Rone Engineers

LOG OF BORING

PROJECT: Proposed Additions to Trinity Valley Iron & Steel Co.

CLIENT: Trinity Valley Iron & Steel Company

BORING NO.: 1

LOCATION: Ft. Worth, Texas

DATE: 8/18/75 TYPE: Core CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

DEPTH IN FEET	DESCRIPTION OF STRATUM
0–2	Brown clay with broken limestone (fill)
2–4	Dark brown and brown clay (fill)
4–8	Brown silty clay with small lime pebbles
8–12	Light tan silty clay with lime pebbles
12–25	Light tan and gray silty clay
25–30	Tan and gray silty clay with tan sand seams
30	Bottom of hole at 30'

Column headings: DEPTH IN FEET, SYMBOL, SAMPLE, STANDARD PENETRATION BLOWS/ft., HAND PEN tsf, DESCRIPTION OF STRATUM

Depth scale: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

LOG OF BORING

PROJECT: Proposed Additions to Trinity Valley Steel Company

CLIENT: Trinity Valley Iron & Steel Company

BORING NO.: 3

LOCATION: Ft. Worth, Texas

DATE: 8/18/75 TYPE: Core CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

STANDARD PENETRATION BLOWS/FT.	HAND PEN tsf.	DESCRIPTION OF STRATUM
		Brown and tan silty clay, steel and glass (fill)
		Tan silty clay with lime pebbles
		Tan and light tan silty clay with lime pebbles
		Tan and light tan silty clay with lime pebbles and gray silty clay seams
		Tan and gray silty clay
13		Tan and gray clayey sand with tan sand
		Bottom of hole at 30'

LOG OF BORING

PROJECT: Proposed Additions to Trinity Valley Steel Company

BORING NO.: 2

CLIENT: Trinity Valley Iron & Steel Company

LOCATION Ft. Worth, Texas

DATE: 8/18/75 TYPE: Core CASED TO: GROUND ELEVATION:

LEGEND: SAMPLE; X STANDARD PENETRATION; ▼ WATER

WATER INFORMATION

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM
0					7" Concrete- Dark brown and brown clay (fill)
					Brown and tan silty clay
5					Tanish brown silty clay with lime pebbles
10					Tan and light tan silty clay with some lime pebbles
15					Tan and light tan silty clay with thin gray silty clay seams
25		X	9		Tan and brown sand with tan and gray silty clayey sand layers up to 5" thick
30		X	13		Bottom of hole at 30'

Depth scale: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

LOG OF BORING

PROJECT: Proposed Additions to Trinity Valley Iron & Steel Co.

CLIENT: Trinity Valley Iron & Steel Company

BORING NO.: 4

LOCATION: Ft. Worth, Tex.

DATE: 8/18/75 TYPE: Core CASED TO: GROUND ELEVATION:

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM
					Black silty clay with iron (fill)
					Brown and tan silty clay with lime pebbles
5					Tan and light tan silty clay with lime pebbles
10 – 15					Tan and light tan and gray silty clay with some lime pebbles
20 – 25					Tan and gray silty clay
					Tan and gray silty sandy clay with tan sand seams
30					Bottom of hole at 30'

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

SUMMARY OF TESTS

PROJECT Proposed Additions to Trinity Valley Steel Co.

CLIENT Trinity Valley Iron & Steel Co. DATE 8/19/75

BORING NUMBER	DEPTH (feet)	TYPE OF MATERIAL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS			LINEAR SHRINKAGE (%)	PENETRATION (Blows Per Foot)	COMPRESSIVE STRENGTH (psf)	CONFINING PRESSURE (psi)	STRAIN (%)
					LL	PL	PI					
1	2-3	Brown silty clay	22	101	54	18	36	18				
	9-10	Light tan silty clay	17	111	32	14	18	8		2,523		5.0
	14-15	Light tan and gray silty clay	14	121						3,132		5.0
	19-20	Light tan and gray silty clay	16	114						2,871		5.0
2	4-5	Tannish brown silty clay	15	112	38	15	23	12		3,828		5.0
	9-10	Tan & light tan silty clay	19	105						2,784		5.0
	14-15	Tan & light tan silty clay	16	116						2,697		5.0
3	3-4	Tan silty clay	18	104	45	17	28	15		2,523		5.0
	14-15	Tan and gray silty clay	15	118						3,219		5.0
	24-25	Tan and gray silty clay	21	103						1,888		5.0

SOUTHWESTERN LABORATORIES

SUMMARY OF TESTS

PROJECT Proposed Additions to Trinity Valley Steel Co.

CLIENT Trinity Valley Iron & Steel Company DATE 8/19/75

ING IBER	DEPTH (feet)	TYPE OF MATERIAL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	ATTERBERG LIMITS LL	PL	PI	LINEAR SHRINKAGE (%)	PENETRATION (Blows Per Foot)	COMPRESSIVE STRENGTH (psf)	CONFINING PRESSURE (psi)	STRAIN (%)
4	3-4	Brown & tan silty clay	19	106	41	16	25	15		2,958		5.0
	12-13	Light tan and tan and silty clay	15	115						3,132		5.0
	19-20	Tan and gray silty clay	12	122						3,393		5.0

SOUTHWESTERN LABORATORIES

RESIDUALS MANAGEMENT TECHNOLOGY
DATE: MAR-10-1982
TECHNICIAN JAN

GRAIN SIZE ANALYSIS
JOB NUMBER 1101-100
SAMPLE NUMBER RED SAMPLE

SIEVE ANALYSIS

GRAMS OF SOIL SIEVED 396

SIEVE SIZE	GRAMS RETAINED	%FINER
1 IN.	0	100
1/2 IN.	14.22	96.4
3/8 IN.	18.09	95.43
#4	26.02	93.42
#8	34.91	91.18
#10	37.36	90.56
#16	43.75	88.95
#20	48.42	87.77
#30	53.32	86.53
#40	58.98	85.1
#50	67.3	83
#80	83.95	78.8
#100	89.58	77.37
#200	113.85	71.25

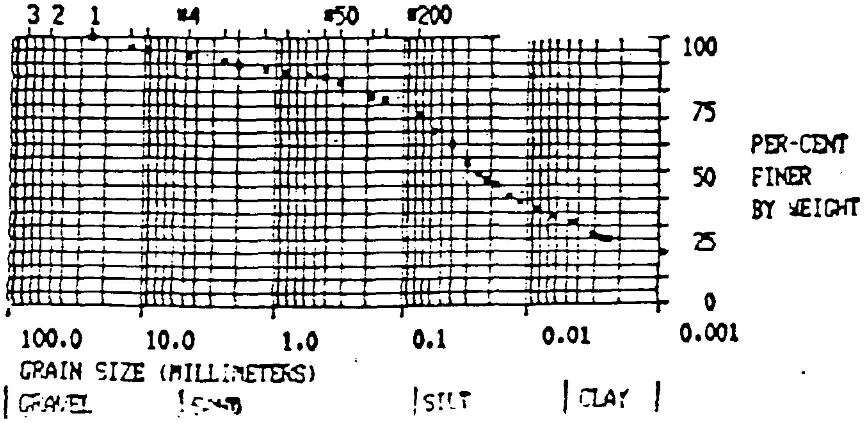
TYPE 152H HYDROMETER ANALYSIS

SOIL SPECIFIC GRAVITY 2.65
PER-CENT PASSING #10 SIEVE 90.56
GRAMS OF SOIL TESTED 51.6

TIME (MINS)	HYDROMETER READING	TEMP (CENT)	PARTICLE SIZE(MM)	%FINER
.5	43.5	21.5	.0609	65.42
1	40.5	21.5	.044	60.14
2	36.5	21.5	.032	53.1
3	34.5	21.5	.0265	49.57
4	33.5	21.5	.0231	47.81
6	32	21.5	.019	45.17
10	30	21.5	.0149	41.65
15	29	21.5	.0123	39.89
30	27	21.5	8.8E-03	36.37
60	25.5	22	6.2E-03	34.08
120	24	22	4.4E-03	31.44
240	22	22	3.2E-03	27.91
300	21.5	21	2.9E-03	26.34
360	21	21	2.6E-03	25.46
420	21	21	2.4E-03	25.46
2880	19	19	9E-04	20.55

GRAIN SIZE COMPOSITION SUMMARY
(PER-CENT BY WEIGHT)

PER-CENT GRAVEL	6.58
PER-CENT SAND	22.16
PER-CENT SILT	38.93
PER-CENT CLAY	32.31



Appendix VII.—*Basis for Listing Hazardous Wastes—Continued*

EPA hazardous waste No.	Hazardous constituents for which listed
K020	ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride
K021	antimony, carbon tetrachloride, chloroform
K022	phenol, tars (polycyclic aromatic hydrocarbons)
K023	phthalic anahydride, maleic anhydride
K024	phthalic anhydride, polynuclear tar-like materials, naphthoquinone
K025	meta-dinitrobenzene, 2,4-dinitrotoluene
K026	paraldehyde, pyridines, 2-picoline
K027	toulene diisocyanate, toluene-2,4-diamine, tars (benzidimidazapone)
K028	1,1,1-trichloroethane, vinyl chloride
K029	1,2.-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinlyidene chloride, chloroform
K030	hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride
K031	arsenic
K032	hexachlorocyclopentadiene
K033	hexachlorocyclopentadiene
K034	hexachlorocyclopentadiene
K035	cresote, benz(a)anthracene, benz(b)fluoroanthene, benzo(a)pyrene
K036	toulene, phosphorodithioic and phosphorothioic acid esters
K037	toulene, phosphorodithioic and phosphorothioic acid esters
K038	phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K039	phosphorodithioic and phosphorothioic acid esters
K040	phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K041	toxaphene
K042	hexachlorobenzene; ortho-dichlorobenzene
K043	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol
K044	N.A.
K045	N.A.
K046	lead
K047	N.A.
K048	chromium, lead
K049	chromium, lead
K050	chromium
K051	chromium, lead
K052	lead
K053	chromium
K054	chromium
K055	chromium, lead
K056	chromium, lead
K057	chromium, lead
K058	chromium, lead
K059	N.A.
K060	cyanide, naphthalene, phenolic compounds, arsenic
K061	chromium, lead, cadmium
K062	chromium, lead
K063	chromium, lead
K064	lead, cadmium
K065	lead, cadmium
K066	lead, cadmium
K067	lead, cadmium
K068	lead, cadmium
K069	chromium, lead, cadmium

N.A.—Waste is hazardous because it meets either the ignitability, corrosivity or reactivity characteristic.

Appendix VIII—Hazardous Constituents

Acetaldehyde
(Acetato)phenylmercury
Acetonitrile
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
2-Acetylaminofluorene
Acetyl chloride
1-Acetyl-2-thiourea
Acrolein
Acrylamide
Acrylonitrile
Aflatoxins
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminobiphenyl
6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methylcarbamate azirino(2',3':3,4) pyrrolo(1,2-a)indole-4,7-dione (ester) (Mitomycin C)
5-(Aminomethyl)-3-isoxazolol
4-Aminopyridine
Amitrole
Antimony and compounds, N.O.S.[1]
Aramite
Arsenic and compounds, N.O.S.
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Auramine
Azaserine
Barium and compounds, N.O.S.
Barium cyanide
Benz[c]acridine
Benz[a]anthracene
Benzene
Benzenearsonic acid
Benzenethiol
Benzidine
Benzo[a]anthracene
Benzo[b]fluoranthene
Benzo[j]fluoranthene
Benzo[a]pyrene
Benzotrichloride
Benzyl chloride
Beryllium and compounds, N.O.S.
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether
N,N-Bis(2-chloroethyl)-2-naphthylamine
Bis(2-chloroisopropyl) ether
Bis(chloromethyl) ether
Bis(2-ethylhexyl) phthalate
Bromoacetone
Bromomethane
4-Bromophenyl phenyl ether
Brucine
2-Butanone peroxide
Butyl benzyl phthalate
2-sec-Butyl-4,6-dinitrophenol (DNBP)
Cadmium and compounds, N.O.S.
Calcium chromate
Calcium cyanide
Carbon disulfide
Chlorambucil
Chlordane (alpha and gamma isomers)
Chlorinated benzenes, N.O.S.
Chlorinated ethane, N.O.S.
Chlorinated naphthalene, N.O.S.
Chlorinated phenol, N.O.S.
Chloroacetaldehyde
Chloroalkyl ethers
p-Chloroaniline
Chlorobenzene
Chlorobenzilate
1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid
p-Chloro-m-cresol
1-Chloro-2,3-epoxybutane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
Chloromethyl methyl ether
2-Chloronaphthalene

[1]The abbreviation N.O.S. signifies those members of the general class "not otherwise specified" by name in this listing.

2-Chlorophenol
1-(o-Chlorophenyl)thiourea
3-Chloropropionitrile
alpha-Chlorotoluene
Chlorotoluene, N.O.S.
Chromium and compounds, N.O.S.
Chrysene
Citrus red No. 2
Copper cyanide
Creosote
Crotonaldehyde
Cyanides (soluble salts and complexes), N.O.S.
Cyanogen
Cyanogen bromide
Cyanogen chloride
Cycasin
2-Cyclohexyl-4,6-dinitrophenol
Cyclophosphamide
Daunomycin
DDD
DDE
DDT
Diallate
Dibenz[a,h]acridine
Dibenz[a,j]acridine
Dibenz[a,h]anthracene(Dibenzo[a,h] anthracene)
7H-Dibenzo[c,g]carbazole
Dibenzo[a,e]pyrene
Dibenzo[a,h]pyrene
Dibenzo[a,i]pyrene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
Dibromomethane
Di-n-butyl phthalate
Dichlorobenzene, N.O.S.
3,3'-Dichlorobenzidine
1,1-Dichloroethane
1,2-Dichloroethane
trans-1,2-Dichloroethane
Dichloroethylene, N.O.S.
1,1-Dichloroethylene
Dichloromethane
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dichlorophenoxyacetic acid (2,4-D)
Dichloropropane
Dichlorophenylarsine
1,2-Dichloropropane
Dichloropropanol, N.O.S.
Dichloropropene, N.O.S.
1,3-Dichloropropene
Dieldrin
Diepoxybutane
Diethylarsine
0,0-Diethyl-S-(2-ethylthio)ethyl ester of phosphorothioic acid
1,2-Diethylhydrazine
0,0-Diethyl-S-methylester phosphorodithioic acid
0,0-Diethylphosphoric acid, 0-p-nitrophenyl ester
Diethyl phthalate
0,0-Diethyl-0-(2-pyrazinyl)phosphorothioate
Diethylstilbestrol
Dihydrosafrole
3,4-Dihydroxy-alpha-(methylamino)-methyl benzyl alcohol
Di-isopropylfluorophosphate (DFP)
Dimethoate
3,3'-Dimethoxybenzidine
p-Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
Dimethylcarbamoyl chloride

1,1-Dimethylhydrazine
1,2-Dimethylhydrazine
3,3-Dimethyl-1-(methylthio)-2-butanone-O-((methylamino) carbonyl)oxime
Dimethylnitrosoamine
alpha,alpha-Dimethylphenethylamine
2,4-Dimethylphenol
Dimethyl phthalate
Dimethyl sulfate
Dinitrobenzene, N.O.S.
4,6-Dinitro-o-cresol and salts
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene Di-n-octyl phthalate
1,4-Dioxane
1,2-Diphenylhydrazine
Di-n-propylnitrosamine
Disulfoton
2,4-Dithiobiuret
Endosulfan
Endrin and metabolites
Epichlorohydrin
Ethyl cyanide
Ethylene diamine
Ethylenebisdithiocarbamate (EBDC)
Ethyleneimine
Ethylene oxide
Ethylenethiourea
Ethyl methanesulfonate
Fluoranthene
Fluorine
2-Fluoroacetamide
Fluoroacetic acid, sodium salt
Formaldehyde
Glycidylaldehyde
Halomethane, N.O.S.
Heptachlor
Heptachlor epoxide (alpha, beta, and gamma isomers)
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclohexane (all isomers)
Hexachlorocyclopentadiene
Hexachloroethane
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethanonaphthalene
Hexachlorophene
Hexachloropropene
Hexaethyl tetraphosphate
Hydrazine
Hydrocyanic acid
Hydrogen sulfide
Indeno(1,2,3-c,d)pyrene
Iodomethane
Isocyanic acid, methyl ester
Isosafrole
Kepone
Lasiocarpine
Lead and compounds, N.O.S.
Lead acetate
Lead phosphate
Lead subacetate
Maleic anhydride
Malononitrile
Melphalan
Mercury and compounds, N.O.S.
Methapyrilene
Methomyl
2-Methylaziridine
3-Methylcholanthrene
4,4'-Methylene-bis-(2-chloroaniline)
Methyl ethyl ketone (MEK)
Methyl hydrazine
2-Methyllactonitrile
Methyl methacrylate
Methyl methanesulfonate
2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime
N-Methyl-N'-nitro-N-nitrosoguanidine
Methyl parathion
Methylthiouracil
Mustard gas
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
1-Naphthyl-2-thiourea
Nickel and compounds, N.O.S.
Nickel carbonyl
Nickel cyanide
Nicotine and salts
Nitric oxide
p-Nitroaniline
Nitrobenzene
Nitrogen dioxide
Nitrogen mustard and hydrochloride salt
Nitrogen mustard N-oxide and hydrochloride salt
Nitrogen peroxide
Nitrogen tetroxide
Nitroglycerine
4-Nitrophenol
4-Nitroquinoline-1-oxide
Nitrosamine, N.O.S.
N-Nitrosodi-N-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodi-N-propylamine
N-Nitroso-N-ethylurea
N-Nitrosomethylethylamine
N-Nitroso-N-methylurea
N-Nitroso-N-methylurethane
N-Nitrosomethylvinylamine
N-Nitrosomorpholine
N-Nitrosonornicotine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
N-Nitrososarcosine
5-Nitro-o-toluidine
Octamethylpyrophosphoramide
Oleyl alcohol condensed with 2 moles ethylene oxide
Osmium tetroxide
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
Parathion
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentacholorophenol
Phenacetin
Phenol
Phenyl dichloroarsine
Phenylmercury acetate
N-Phenylthiourea
Phosgene
Phosphine
Phosphorothioic acid, O,O-dimethyl ester, O-ester with N,N-dimethyl benzene sulfonamide
Phthalic acid esters, N.O.S.
Phthalic anhydride
Polychlorinated biphenyl, N.O.S.
Potassium cyanide
Potassium silver cyanide
Pronamide
1,2-Propanediol
1,3-Propane sultone
Propionitrile
Propylthiouracil
2-Propyn-1-ol
Pryidine
Reserpine
Saccharin
Safrole
Selenious acid
Selenium and compounds, N.O.S.
Selenium sulfide
Selenourea
Silver and compounds, N.O.S.
Silver cyanide
Sodium cyanide
Streptozotocin
Strontium sulfide
Strychnine and salts
1,2,4,5-Tetrachlorobenzene
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
Tetrachloroethane, N.O.S.
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene (Tetrachloroethylene)
Tetrachloromethane
2,3,4,6-Tetrachlorophenol
Tetraethyldithiopyrophosphate
Tetraethyl lead
Tetraethylpyrophosphate
Thallium and compounds, N.O.S.
Thallic oxide
Thallium (I) acetate
Thallium (I) carbonate
Thallium (I) chloride
Thallium (I) nitrate
Thallium selenite
Thallium (I) sulfate
Thioacetamide
Thiosemicarbazide
Thiourea
Thiuram
Toluene
Toluene diamine
o-Toluidine hydrochloride
Tolylene diisocyanate
Toxaphene
Tribromomethane
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene (Trichloroethylene)
Trichloromethanethiol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)
Trichloropropane, N.O.S.
1,2,3-Trichloropropane
O,O,O-Triethyl phosphorothioate
Trinitrobenzene
Tris(1-azridinyl)phosphine sulfide
Tris(2,3-dibromopropyl) phosphate
Trypan blue
Uracil mustard
Urethane
Vanadic acid, ammonium salt
Vanadium pentoxide (dust)
Vinyl chloride
Vinylidene chloride
Zinc cyanide
Zinc phosphide

[FR Doc. 80-14307 Filed 5-16-80; 8:45 am]
BILLING CODE 6560-01-M

Reference 5

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Karen A. Phillips, Chief Clerk

December 16, 1988

Mr. John M. Valdez
Chemical Engineer
Trinity Valley Iron and Steel Company
P.O. Box 2388
Fort Worth, Texas 76113

Re: Trinity Valley Iron and Steel Company
Solid Waste Registration No. 31092
Closure of Hazardous Waste Landfill

Dear Mr. Valdez:

The Texas Water Commission (TWC) has received the closure certifications for your landfill, which were submitted by letter dated August 16, 1988. The TWC staff has reviewed the documents submitted, and has determined that they are compliant with the requirements for certification of closure found at Title 40 Code of Federal Regulations (40 CFR) Section 265.115.

The TWC staff has also reviewed the results of a comprehensive ground water monitoring evaluation (CME), which was conducted by Kevin McGrath of the TWC District 4 office and Eric Adidas of the TWC Central Office on December 9 and 10, 1987; and a closure inspection, which was conducted by Kevin McGrath on February 2, 1988. It appears from these reports that all hazardous waste and hazardous waste constituents have been removed from the landfill, and the closure certifications are hereby accepted.

According to the results of the CME, Trinity Valley Iron and Steel Company has complied with all of the requirements of the Agreed Order which was issued by the Commission on June 10, 1986. As a result of the completion of closure of the hazardous waste landfill, all unresolved violations of the TWC solid waste rules previously alleged have now been resolved.

It is noted that nonhazardous industrial solid waste will remain in the landfill. Accordingly, the TWC acknowledges receipt of your proof of deed recordation which was submitted by letter dated May 27, 1983, in compliance with 31 TAC §335.5. It is the continuing obligation of persons associated with a solid waste management facility to assure that industrial solid waste is managed in such a way that it does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by 31 TAC §335.4. If closure of the facility does not achieve these requirements, the burden remains upon Trinity Valley Iron and Steel Company to take any necessary and legal actions to correct such conditions.

Pursuant to a recent rule amendment by the U. S. Environmental Protection Agency (EPA), which became effective on December 31, 1988 (but has not yet been adopted by the TWC), your facility is still subject to post-closure care permitting requirements applicable to hazardous waste disposal facilities, unless you demonstrate removal as provided under 40 CFR §270.1(c)(5) and (6). Copies of pages 52 FR 45798-9 of the Federal Register dated December 1, 1987, are enclosed for your information.

If you have any questions regarding this matter, please contact Michael Moore of the Hazardous and Solid Waste Enforcement Section at 512/463-8425.

Sincerely,

Samuel Pole

Samuel B. Pole, Chief
Hazardous and Solid Waste Enforcement Section
Hazardous and Solid Waste Division

Enclosure

MM:mm

cc: District 4
H & SW Closure Unit
H & SW Reports & Information Management Unit
H & SW Compliance Assistance Unit
H & SW Permits Section
Fiscal Services Section

3400 BRYCE P.O. BOX 2388 FORT WORTH, TEXAS 76113 TELEPHONE (817) 738-1925
iron & steel company

August 16, 1988

Mr. Dave Smith
Closure Unit
Hazardous & Solid Waste Enforcement Section
P. O. Box 13087, Capital Station
Austin TX 78711-3087

RE: TDWR Solid Waste Registration #31092
Closure of Hazardous Waste Landfill

Dear Mr. Smith:

In accordance with 31TAC, Section 335.216, Trinity Valley Iron & Steel Company hereby certifies that the site has been closed in accordance with the closure plan previously approved by the Texas Water Commission. The plan has been followed in each detail and in accordance with the original plan and modifications set forth by the Commission. All records concerning the closure of the site, including records of all materials transported from the site and their destination, are being held at our facility in accordance with Texas Water Commission regulations.

In addition, we are enclosing a certificate to change company status from "interim" to "generator". If any further questions arise, please feel free to contact me.

Sincerely,

TRINITY VALLEY IRON & STEEL CO.

John M. Valdez
Chemical Engineer

JMV/pc
Enc.

Reference 6

CLIMATIC ATLAS OF TEXAS

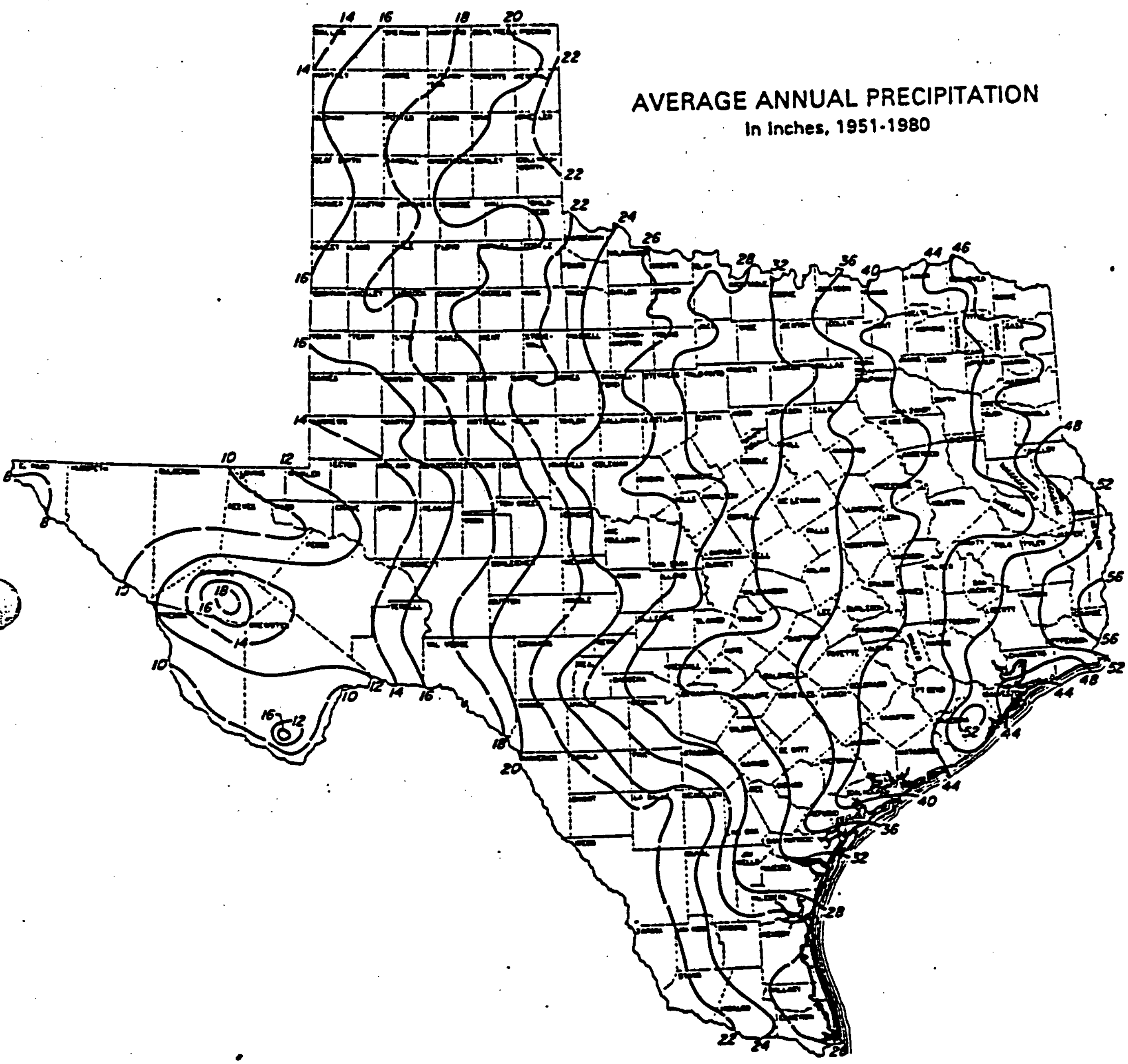
By

Thomas J. Larkin and George W. Bomar
Meteorologists

LP-192

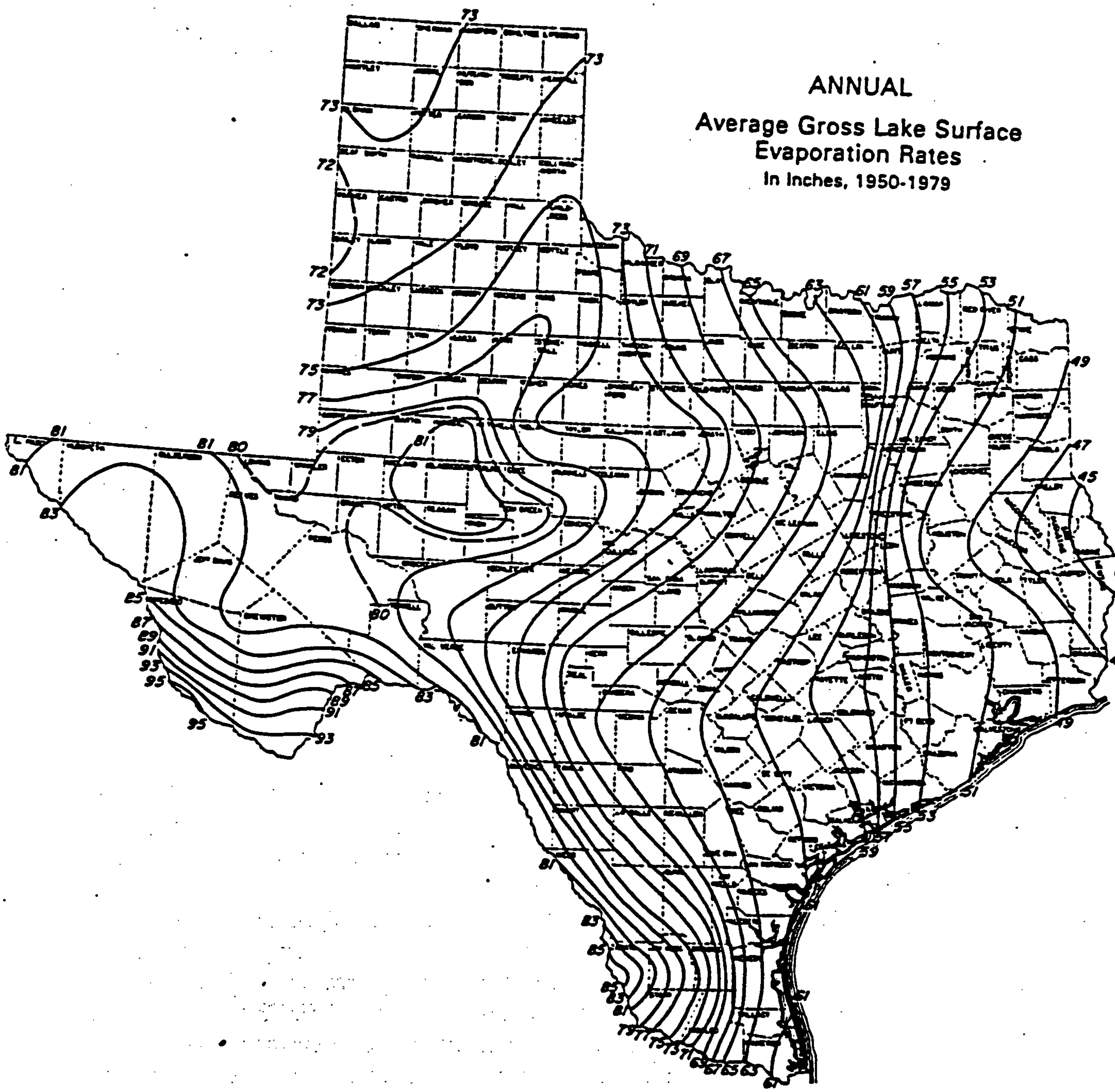
Texas Department of Water Resources

December 1983


AVERAGE ANNUAL PRECIPITATION
In Inches, 1951-1980
14
16
18
20
22
24
26
28
32
36
40
44
46
48
52
56
10
12
8

002

ANNUAL
Average Gross Lake Surface Evaporation Rates
In Inches, 1950-1979



003

Reference 7

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

September 25, 1996

Ms. Shannon Breslin
Texas Parks and Wildlife Department
Texas Natural Heritage Program
3000 South IH 35, Suite 100
Austin, Texas 78704

Re: Trinity Valley Iron, Fort Worth, Tarrant County, Texas - Endangered/Threatened Species

Dear Ms. Breslin:

The Texas Natural Resource Conservation Commission (TNRCC) is currently evaluating for the United States Environmental Protection Agency (EPA) the above referenced site in Texas to determine if it is a candidate for listing in the National Priorities List under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. 9601 et seq.

A **Preliminary Assessment Report or Screening Site Inspection Report** is being prepared for this site which must contain information on any habitats known to be used by Federal and/or State designated endangered or threatened species. The site is located at Latitude 32° 44' 20" N and Longitude 97° 22' 10" W on the **Fort Worth, Tex.** topographic quadrangle. Please provide a list of rare species occurrences within a 4 mile radius and 15 miles downstream from this site.

Your assistance is greatly appreciated. Should you have any questions please contact me at 512/239-2591 (mail code MC-142).

Sincerely,

Todd Counter

C. Todd Counter, Project Manager
Superfund Site Discovery and Assessment Team
Emergency Response and Assessment Section
Pollution Cleanup Division

CTC\ok

TEXAS PARKS & WILDLIFE

Currently available data and Endangered Resources Branch review of the activity as proposed indicate no anticipated negative impacts to rare species or natural communities.
Reviewed: Shannon Breslin
Date: 27 Sept 96

Reference 8

TNRCC

Protecting Texas by Reducing and Preventing Pollution

FAX TRANSMITTAL

DATE: October 16, 1996 NUMBER OF PAGES *(including this cover sheet)*: 2

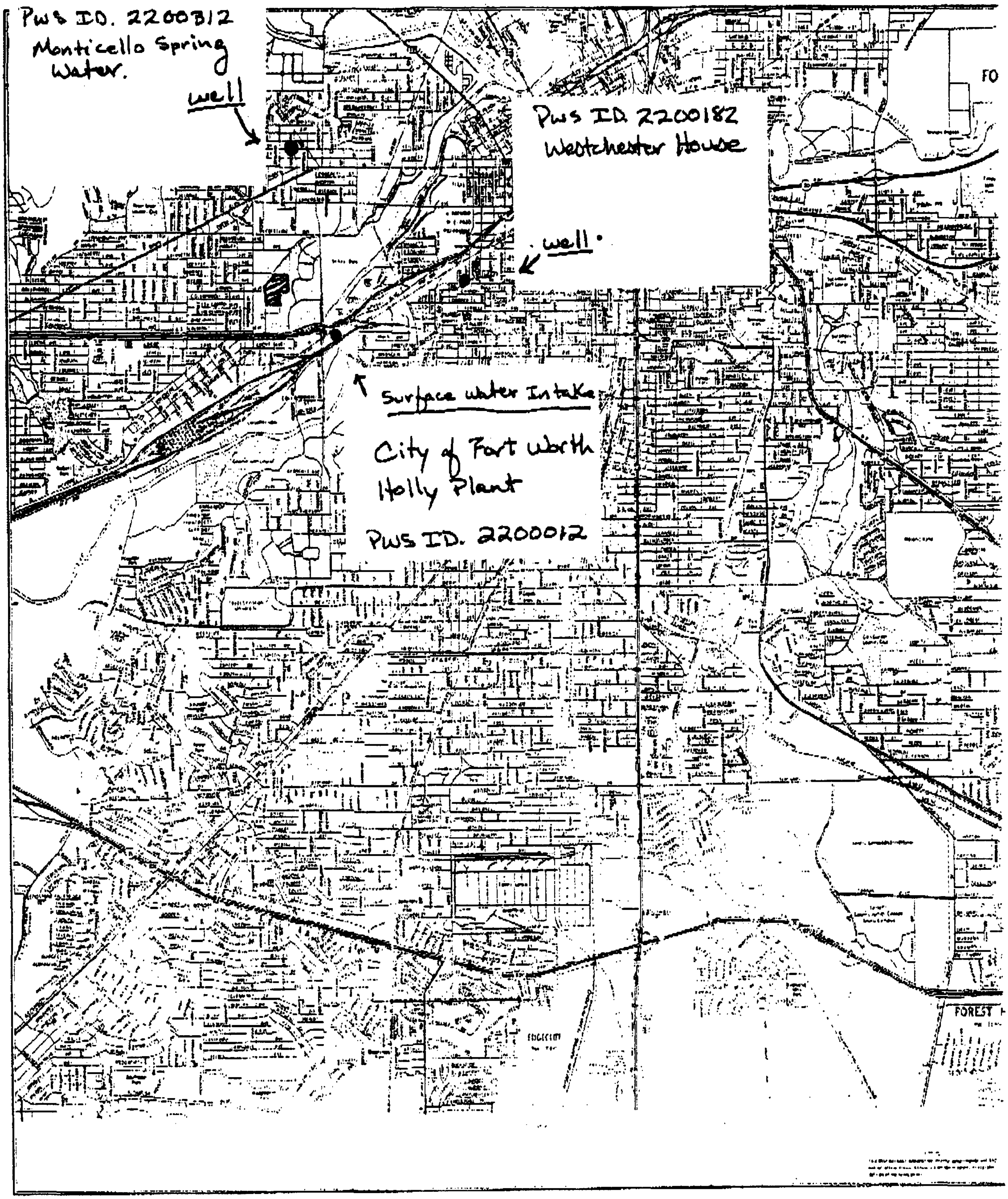
TO:	Name	C. Todd Counter
	Organization	Pollution Cleanup
	FAX Number	239-2527
FROM:	TEXAS NATURAL RESOURCE CONSERVATION COMMISSION	
	Name	Kenneth D. May
	Division/Region	WU/PDW/SWP
	Telephone Number	512-239-6020
	FAX Number	512-239-6050

NOTES:

Todd,

The "Trinity Valley Iron" site is not located within a Wellhead Protection Area. The attached map is a county map showing the western portion of Fort Worth, Texas. The nearest WHP area is approximately 10 miles away and is not visible on this scale map. Annotated on the map are the groundwater wells and surface water intakes located within a 1.5 mile radius of the "Trinity Valley Iron" site. I hope this helpful.

Thanks, Ken.


PWS ID. 2200312
Monticello Spring Water.
well
PWS ID. 2200182
Westchester House
well
Surface water Intake
City of Fort Worth
Holly Plant
PWS ID. 2200012
FOREST

Reference 9

Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

Population Around Trinity Valley Iron Site
3400 Bryce
Fort Worth, Tarrant County, Texas

Location of site: Latitude 32 degrees, 44 minutes, 20 seconds N
Longitude 97 degrees, 22 minutes, 10 seconds W

The following estimated population totals are based on block-level 1990 U.S. Census Bureau data, which is the most current and detailed population data available. Since census blocks vary in size and since some blocks lie only partially within a circle described by a given radius, these numbers were computed by averaging the highest and lowest possible population totals for each radius.

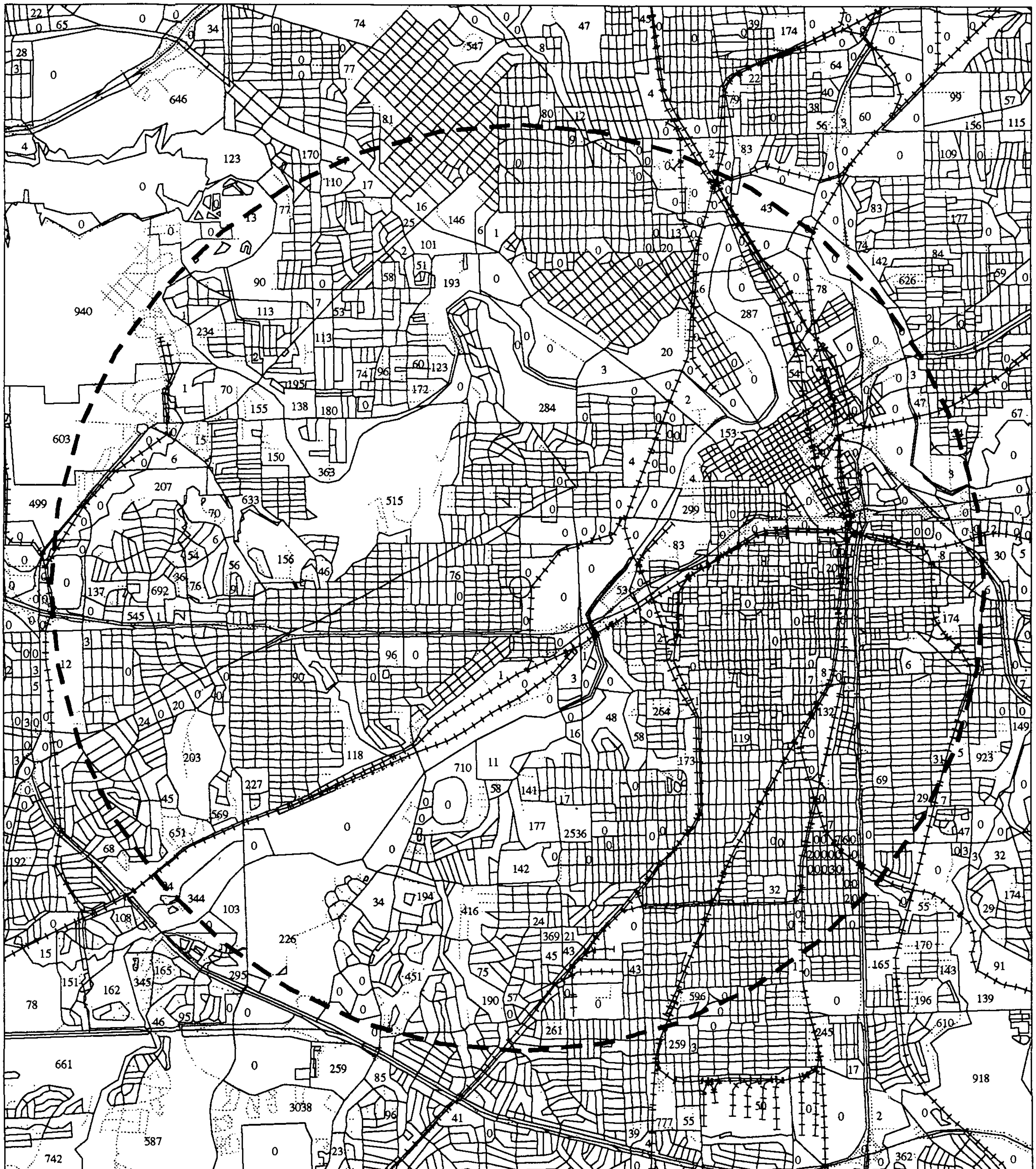
Radius (mi)	Highest	Lowest	Average
.25	853	361	607
.5	2,731	1,874	2,302
1	9,256	6,936	8,096
2	35,965	26,803	31,384
3	87,215	76,593	81,904
4	154,536	141,263	147,899

Given the above average population numbers, the estimated total population that lives within each distance range from the site can be computed:

Distance Range	Estimated Population
0 to .25	607
.25 to .5	1,695
.5 to 1	5,794
1 to 2	23,288
2 to 3	50,520
3 to 4	65,995

M McDonough
GIS Section

09/25/96
CRF 970925008



trinity_valley_iron

1990 Census Block Boundaries and Populations
4 Mile Radius Circle Centered on Latitude 32.7388 N, Longitude 97.3694 W

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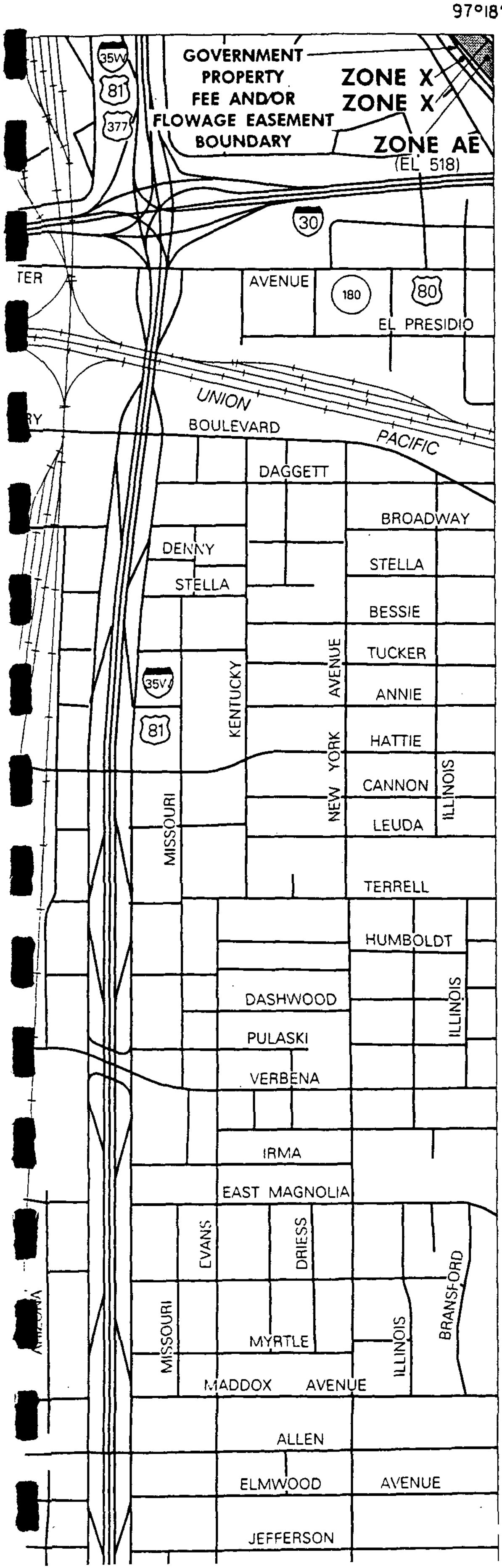
Reference 10



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100–YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100–year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500–year flood; areas of 100–year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100–year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500–year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 — Identified 1990 — Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

● M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of Special Flood Hazard (100–year flood) include Zones A, AE, AH, AO, A99, V, and VE.

KS

OF LOCATION

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y 2 feet west of
tadium Drive, and
feet south of
Bellaire Drive

4731, located on
Butler Street,
feet east of
Railroad and
7 feet south of

Reference 11

TEXAS BOARD OF WATER ENGINEERS

BULLETIN 5709

GEOLOGY AND GROUND-WATER RESOURCES OF TARRANT COUNTY, TEXAS

By

E. R. Leggat, Geologist
United States Geological Survey

Prepared by the Geological Survey,
United States Department of the Interior
in cooperation with the
Texas Board of Water Engineers
and the
City of Fort Worth

September 1957

GEOLOGY AND GROUND-WATER RESOURCES OF TARRANT COUNTY, TEXAS

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ABSTRACT

Tarrant County, in north-central Texas, is underlain by beds of sand, clay, and limestone which dip gently eastward. The formations that yield water to wells are the Travis Peak formation, Glen Rose limestone, Paluxy sand, and Woodbine formation of Cretaceous age and the alluvial deposits of Pleistocene and Recent age.

The ground water in Tarrant County is derived primarily from precipitation on the outcrop of the water-bearing formations, and by seepage from streams and lakes. Ground water is discharged naturally by evapotranspiration and springs, and artificially through wells.

The withdrawal of ground water through wells from all aquifers in the county increased from 9 million gallons per day in 1941 to 17 million gallons per day in 1954. About 65 percent (11 mgd) of the pumpage in 1954 was from the Travis Peak formation and 30 percent (5 mgd) from the Paluxy sand. A large part of the increase in pumping since 1941 was in areas outside Fort Worth.

As a result of a marked increase in pumping from the Travis Peak formation and Paluxy sand in Tarrant County since 1952, as well as an increase in withdrawals in Dallas County, the artesian head declined over an extensive area. The decline of the artesian head in the Travis Peak during the period 1953-54 ranged from 110 feet in the eastern part of Tarrant County to 34 feet in the western part of Fort Worth. The decline in the artesian head in the Paluxy in 1954 ranged from 103 feet in the Arlington area to 0.5 foot in the Lake Worth area. Since 1890 the artesian head has declined a recorded maximum of 770 feet in the Travis Peak and 295 feet in the Paluxy.

Since 1950 the fluctuations of the water table in the area of outcrop of the Paluxy sand can be correlated directly with precipitation. A part of the decline in the water table, however, as well as a part of the decrease in rejected recharge to the Clear Fork of the Trinity River is due to the increased withdrawals from the Paluxy in Tarrant and Dallas Counties.

Results of pumping tests indicate that the coefficient of transmissibility of the Travis Peak formation ranges from 2,600 to 12,500 gallons per day per foot, increasing eastward. The coefficient of transmissibility of the Paluxy sand is fairly uniform, averaging about 4,500 gallons per day per foot. One pumping test in the Woodbine formation showed a coefficient of transmissibility of 2,700 gallons per day per foot. These low coefficients of transmissibility indicate that when closely spaced wells are pumped, relatively steep gradients must be developed over a wide area in a short time, resulting in considerable interference among wells.

Chemical analyses of water samples indicate that the Travis Peak, Glen Rose, and Paluxy formations generally yield soft water having a high bicarbonate content and a high percent sodium. The Woodbine formation yields water that is considerably more mineralized and has a high iron content.

Concentration of pumping rather than overdraft of the regional supply has been responsible for the large declines in water levels, which have resulted in some dewatering of both the Travis Peak formation and Paluxy sand in the Fort Worth area. Additional pumping in this area will result in the further expansion of the zone of dewatering and a decrease in the yields of most existing wells, but the rate of decline at a given rate of pumping will be less than in the past because the coefficient of storage of the dewatered portion of the aquifers is much larger than that of the artesian portion. It is possible that use of the ground-water resources of Tarrant County can be increased by wider spacing of wells or redistribution of pumping in the overdeveloped areas. Moderate amounts of additional ground water may be obtained from the Travis Peak and Paluxy east of Fort Worth, where the depth to the aquifers increases and consequently the amount of available drawdown is greater. Additional importation of surface water will be necessary to meet the larger demands, as the ground-water supply dwindles.

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INTRODUCTION

PURPOSE AND SCOPE

Requirements of rapidly growing communities and the influx of new industrial plants have resulted in a sharp increase in the use of water in Tarrant County. The inadequacy of existing surface-water supplies to meet the demand emphasized the need for a thorough investigation of the ground-water resources of the county, which would include determination of the approximate amount of ground water in storage, the ability of the aquifers to yield water, the present use of ground water, the effect on the ground-water resources in Tarrant County of pumping outside the county, the source or sources of recharge to the ground-water reservoirs, the chemical character of the ground water, and the future outlook of ground-water development. The investigation was made possible through cooperation among the Texas Board of Water Engineers, the cities of Fort Worth and Arlington, and the U. S. Geological Survey, and is part of a Statewide program of ground-water investigations in Texas. The field work was begun in September 1949 by G. J. Stramel but was interrupted in 1950. The writer resumed the investigation in September 1953. George Porterfield assisted in the field work in 1954.

The study was made under the administrative direction of A. N. Sayre, chief, Ground Water Branch, U. S. Geological Survey, and under the direct supervision of R. W. Sundstrom, district engineer in charge of ground-water investigations in Texas.

LOCATION OF AREA

Tarrant County is in north-central Texas and is bounded on the north by Wise and Denton Counties, on the east by Dallas County, on the south by Johnson and Ellis Counties, and on the west by Parker County (fig. 1). The intersection of the parallel of latitude 32°45' north and the meridian of longitude 97°20' west falls near the middle of Tarrant County. The county is nearly square and has an area of 877 square miles.

The population of Tarrant County in 1950, according to the United States Bureau of the Census, was 361,253, of which 77 percent, or 278,778, were in Fort Worth, the county seat. Other cities and their populations are: White Settlement (10,827), Arlington (7,692), River Oaks (7,097), Haltom City (5,760), Grapevine (1,824), and Kennedale (1,046).

Transportation facilities in Tarrant County include an extensive network of paved Federal and State highways and farm-to-market roads. Nine railroad trunk lines serve Fort Worth and most of the smaller communities in the county, and air transportation is furnished by three major airlines and three feeder lines.

METHODS OF INVESTIGATION

Data for 729 wells were collected, including drillers' logs, records of casing and screen setting, use of water, well yield, and depth to water (tables 10 and 11). The locations of the wells are shown on plate 9 and figure 26. Periodic water-level measurements were made in selected wells (table 12), and continuous records of the fluctuations of water levels in 8 wells were obtained by means of automatic water-stage recorders. Pumping tests were made in 20 wells to determine the hydraulic characteristics of the water-bearing formations throughout the area. Electric logs were used in the interpretation of the subsurface geology and the chemical character of the water in the deeper strata. Water samples for chemical analyses were collected from 168 wells, 1 spring, 2 lakes, and 1 river (table 13).

Seepage measurements were made on the West Fork of the Trinity River in order to determine whether the stream is effluent or influent between Lake Bridgeport, in Wise County, and Eagle Mountain Lake, in Tarrant County.

ECONOMIC DEVELOPMENT

Although the economy of Tarrant County is diversified, industry provides the largest source of income. Industries include the manufacture or processing of aircraft, automobiles, meat products, flour, cotton-seed oil, garments, furniture, Portland cement, leather goods, foundry and tool products, and petroleum. Most of the industrial production is concentrated in the Fort Worth area. Since 1951, however, the Bell Helicopter plant and the General Motors assembly plant were built in Hurst and Arlington, respectively. There are also two military installations, the Fort Worth General Depot and Carswell Air Force Base. Sand and gravel for construction purposes is obtained in the flood plain of the Trinity River and in the channels of numerous tributaries in Tarrant County. Since 1918, 26 oil tests have been drilled; however, oil in commercial quantity has not been found.

Tarrant County is one of the leading livestock and dairy-cattle-breeding counties in Texas. Dairying is practiced throughout the county, whereas beef cattle are raised principally in the rolling grasslands of the western part of the county. The county is also one of the leading poultry centers in Texas.

Farming is carried on in all parts of the county, but individual crops are restricted in areal extent. According to the Extension Service of the Texas A. & M. College, the principal farming area is in the southeastern part of the county, where the main crops are cotton, corn, clover, vetch, oats, and grain sorghum. Truck crops are grown on the sandy lands of the county, including the flood plains of the Trinity River and its tributaries. Alfalfa is raised on the flood plains where supplemental water for irrigation is available. Irrigation from wells and surface supplies generally is limited to the flood plains, and the area irrigated probably does not exceed 3,000 acres.

PREVIOUS INVESTIGATIONS

R. T. Hill in 1901 discussed the geology of Tarrant County with special reference to artesian waters. Winton and Adkins (1919), in a study of the geology of Tarrant County, briefly referred to the water resources. An investigation of the ground-water resources of Fort Worth and vicinity was made in 1942 by W. O. George and N. A. Rose. Most of the well data of that report are included in this report. In 1944 Lang [1] prepared a preliminary report on the pos-

1/ Lang, J. W., 1944, A few facts regarding the ground-water supply of Fort Worth and vicinity, Tex.: U. S. Geol. Survey typewritten report.

sibility of obtaining additional ground water in the Fort Worth area. In 1949, Sundstrom, Broadhurst, and Dwyer reported on the public water supplies of Fort Worth, Arlington, Everman, Handley, and Mansfield.

ACKNOWLEDGMENTS

Appreciation is expressed to the many people who contributed data to this report. Well-drilling contractors in Fort Worth, Dallas, and Houston cooperated generously by furnishing well logs and performance-test data. Many industrial establishments, particularly the Texas Electric Service Co. and Leonard's Department Store, made their well installations available for various tests and observations.

The Soil Conservation Service of the United States Department of Agriculture and the Department of Geology of Texas Christian University loaned aerial photographs of Tarrant County, and the United States Corps of Engineers furnished considerable test- and core-hole data. Appreciation is expressed also for the information furnished by the officials of the cities of Fort Worth, Arlington, and Haltom City. The interest shown in the field geology by R. F. Perkins of the Department of Geology of Southern Methodist University, O. D. Weaver, Jr., of the Midwest Oil Corp., and Jesse Rogers of the Texas Co. is sincerely appreciated.

CLIMATE

Tarrant County has a subhumid climate characterized by moderate rainfall, mild temperatures, abundant sunshine, and low relative humidity. The days are hot in the summer, but temperatures exceeding 100 degrees are frequent only during periods when the rainfall is below normal. The hot summer days are moderated somewhat by the dryness of the air and by a steady south wind. The winters generally are mild, with short periods of freezing weather and relatively little snowfall.

According to records of the United States Weather Bureau at Meachum Field and Amon Carter Field, the annual precipitation at Fort Worth for the period 1900-54 averaged 31.76 inches, ranging from a low of 17.91 inches in 1921 to a high of 51.03 inches in 1932. (See table 1 and fig. 2,) However, only 15.56 inches was measured by the Weather Bureau at the Leonard Building in Fort Worth in 1954. The maximum, minimum, and average monthly precipitation at Fort Worth is shown in figure 3. Every month except January has an average rainfall exceeding 2 inches, and about 30 percent of the annual precipitation falls during the period April to June, inclusive.

The average annual temperature at Fort Worth is 66°F, and the highest and lowest temperatures recorded are 112°F and -8°F (fig. 3). Temperatures exceed 90°F and 100°F on an average of about 94 and 12 days per year, respectively. During 1954, however, when precipitation was the lowest on record in the Fort Worth area, temperatures exceeded 90°F and 100°F on 125 and 52 days, respectively. The average date for the first and last killing frosts are November 16 and March 13, respectively, although killing frosts have occurred as early as October 24 and as late as April 9. Thus the average length of the growing season is about 250 days.

Table 1.- Monthly precipitation, in inches, at Meachum and Amon Carter Fields, Fort Worth, Tex., 1900-54. Station moved to Carter Field on April 26, 1953

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1900	0.70	0.12	0.73	7.34	6.58	0.84	5.90	1.43	9.12	3.22	0.56	0.35	36.89
1901	.08	1.59	1.57	2.04	4.50	.33	1.99	1.29	1.67	1.90	2.10	.59	19.65
1902	.42	.36	3.80	1.81	4.31	.58	6.29	T	2.40	1.40	6.89	1.05	29.31
1903	1.83	4.63	2.03	.59	1.84	4.84	1.84	1.57	2.70	4.53	.00	.30	26.70
1904	1.30	1.79	4.01	2.21	3.86	5.42	2.15	3.26	2.63	5.29	.02	.36	32.30
1905	1.52	1.93	3.39	7.73	5.45	2.69	8.35	.56	.83	4.21	3.19	3.60	43.45*
1906	.93	2.08	1.99	2.56	8.24	4.13	2.56	4.98	4.16	.91	2.19	1.22	35.95
1907	.51	1.90	.70	1.31	6.53	2.22	4.15	.29	1.92	3.01	5.81	2.18	30.53
1908	.96	2.45	2.95	9.63	10.69	2.90	2.66	2.74	3.52	4.49	2.05	.03	45.07
1909	.09	.11	.41	1.66	1.09	2.97	.02	2.38	2.08	2.20	5.11	2.81	20.93
1910	1.36	1.14	1.02	2.65	5.76	1.38	.14	.26	2.21	.68	.14	1.23	17.97
1911	.21	3.84	1.87	3.33	.22	.43	6.26	2.39	1.38	.99	1.05	5.06	27.03
1912	.17	1.22	3.34	3.20	2.71	4.26	.27	6.56	.83	1.51	.33	1.95	26.35
1913	2.30	.87	1.04	2.47	2.74	3.03	4.36	T	7.29	2.28	5.90	5.42	37.70
1914	.43	1.17	2.89	5.99	10.71	2.97	.73	9.02	1.61	.28	6.44	4.40	46.64
1915	1.32	2.18	1.40	4.98	2.49	6.88	.30	10.33	1.62	2.58	.29	1.99	36.36
1916	4.01	.01	3.68	6.99	3.70	3.30	1.38	3.84	.73	1.89	1.82	.11	31.46
1917	1.43	1.47	2.42	4.11	3.92	1.97	2.65	1.92	2.41	.17	1.35	.05	23.87
1918	1.36	.01	.93	6.21	1.99	5.16	1.10	.29	2.09	3.31	7.94	4.08	34.47
1919	3.03	2.03	3.34	2.06	3.99	3.72	5.25	5.00	4.12	9.44	3.32	.44	45.74
1920	3.48	.76	4.42	.51	8.66	2.33	3.49	4.22	2.76	6.52	1.70	1.31	40.16
1921	2.87	2.62	2.67	1.99	1.04	2.63	1.14	.95	.11	.31	1.24	.44	17.91
1922	1.63	2.00	1.57	17.64	4.58	1.76	1.35	.52	.41	2.33	2.57	.06	36.42
1923	4.60	2.05	1.52	5.30	.54	6.74	.99	1.68	2.06	6.05	1.63	4.68	37.84
1924	.89	1.97	4.66	2.33	4.00	1.25	.96	3.77	3.78	T	1.60	1.23	26.44
1925	1.44	.74	.02	3.59	8.11	.29	.98	.40	1.79	3.77	2.05	.04	23.22
1926	4.04	.08	3.60	3.73	3.79	3.32	4.13	4.39	1.41	3.16	.73	3.03	35.41
1927	1.45	1.77	2.19	3.66	.44	3.33	1.53	.80	4.00	4.47	.58	2.59	26.81
1928	.46	3.53	1.10	5.70	3.77	11.58	4.24	2.13	.45	4.15	1.97	5.50	44.58
1929	2.08	2.78	1.39	2.06	5.83	.20	.43	T	2.29	2.12	1.50	.41	21.09
1930	.84	1.08	2.86	2.37	10.37	1.87	.37	3.12	1.19	7.96	1.71	2.08	35.82
1931	1.79	2.84	4.20	1.97	2.42	2.43	.44	3.38	1.25	3.39	2.78	2.73	29.62
1932	9.07	4.92	.63	3.43	6.03	3.04	2.07	2.92	10.80	1.66	1.56	4.90	51.03
1933	1.96	2.47	2.18	1.57	4.67	.03	5.70	2.25	4.94	1.24	.66	2.13	29.80
1934	1.86	1.67	4.26	2.39	.82	T	.08	.13	4.90	.12	2.30	.56	19.09
1935	3.70	3.29	1.40	3.06	9.15	7.22	.89	.70	3.61	4.01	1.65	2.26	40.94
1936	.67	.45	.63	.99	9.48	.03	2.35	.23	7.30	3.72	.46	1.84	28.15
1937	1.71	.30	3.88	.58	1.00	5.74	1.93	1.02	.32	3.55	4.39	5.31	29.73
1938	2.74	4.57	3.89	3.03	2.80	1.61	2.16	.11	.78	.11	1.17	1.26	24.23
1939	2.66	2.42	1.64	1.48	2.54	4.04	2.02	1.44	.12	.55	2.72	.68	22.31
1940	.59	2.00	.40	5.97	7.15	7.30	2.86	2.16	.68	1.47	6.35	4.72	41.65
1941	1.45	3.42	1.52	3.52	2.02	7.12	1.49	2.71	1.28	3.68	1.08	1.88	31.17
1942	.39	.64	1.37	16.97	2.85	3.23	.62	4.69	3.82	6.18	.92	1.59	43.27
1943	.20	.51	4.05	1.63	7.83	3.93	.73	T	7.31	.73	.51	3.32	30.75
1944	2.58	4.81	1.30	2.70	6.42	.76	2.52	2.65	.80	2.53	3.82	3.60	34.49
1945	1.92	6.96	6.19	2.87	1.81	4.12	3.07	.62	2.17	2.31	1.13	.55	33.72
1946	2.79	2.93	2.80	2.49	12.09	.65	.90	6.84	2.69	1.31	6.50	3.40	45.39
1947	1.21	.55	2.92	2.98	2.50	4.08	.10	4.18	2.81	2.14	2.23	4.50	30.20
1948	.96	4.12	1.07	1.11	4.34	2.46	1.93	.90	.19	2.09	.50	.44	20.11
1949	5.45	4.75	3.69	2.47	10.64	3.52	.10	2.27	3.13	6.50	.09	1.04	43.65
1950	5.01	2.47	1.58	4.73	6.16	3.16	4.53	3.05	3.21	.30	.02	T	34.22
1951	1.39	2.42	1.33	2.27	4.60	4.12	2.22	.47	1.84	1.62	1.00	.09	23.37
1952	.58	1.12	1.39	6.51	3.21	T	.56	.44	.54	.01	5.84	2.49	22.69
1953	.54	1.34	2.52	4.82	3.55	.55	.97	1.09	1.68	4.27	2.09	1.32	24.74
1954	2.08	.73	.66	3.62	4.38	1.20	.24	.81	1.46	2.35	1.24	.78	19.55
MEAN	1.82	2.03	2.27	3.81	4.70	3.04	2.18	2.26	2.60	2.73	2.30	2.02	31.76

T, trace.

Few records are available on the rate of evaporation in Tarrant County. Based on 37 years of record at Fort Worth, the average relative humidity is about 53 percent at 12:30 p.m., indicating a fairly high rate of evaporation. The evaporation from a free water surface was about 78 inches at Benbrook dam in 1955. This is more than twice the annual precipitation. However, owing to the shortness of the period of record, the subnormal rainfall, and the above-normal summer temperatures, the rate of evaporation in 1955 may have been considerably larger than in the average year. Data from Denton, which is approximately 30 miles north of Fort Worth and has a similar average annual rainfall, indicate an average evaporation of 54.49 inches from a free water surface for the 36-year period 1917-52.

TOPOGRAPHY

Tarrant County lies within the area designated by Hill (1901, p. 27) as the East-Central Province of the Texas Coastal Plain. The county is divided into four north-trending belts which are clearly marked by soil, plant, and topographic characteristics. These belts from west to east are the Western Cross Timbers, the Grand Prairie, the Eastern Cross Timbers, and the Black Prairie.

The Western Cross Timbers belt is in the northwestern quarter of the county in the area underlain by the Walnut clay and the Paluxy sand. The area is dissected into steep hills and deep ravines in which are numerous waterfalls, and the sandy soil is heavily timbered with post oak and black-jack oak.

The Grand Prairie is the most extensive belt and is underlain by alternating limestones and marls that produce a terrace of "cuesta" topography. The surfaces of the terraces slop gently eastward, broken only by relatively steep westward-facing escarpments. The thin mantle of black loamy soil is well drained, is comparatively treeless except for isolated clumps of upland timbers, and is one of the most productive soils in the region of which Tarrant County is a part.

The Eastern Cross Timbers belt, which coincides with the outcrop of the Woodbine formation, is well dissected by streams and is characterized by low, rounded wooded hills on the western edge and gentle slopes of the eastern margin. Characteristic features of the western border are wooded knobs formed by outliers of the basal beds of the Woodbine.

The Black Prairie belt is underlain by the Eagle Ford shale. The surface, which is relatively treeless and poorly drained, slopes gently eastward to the base of a prominent limestone escarpment in western Dallas County.

The altitude ranges from about 940 feet in the west-central part of Tarrant County to about 420 feet in the channel of the West Fork of the Trinity River where it leaves the county; thus, the maximum relief in the county is approximately 520 feet.

DRAINAGE

Tarrant County is drained by the West Fork, Clear Fork, and Elm Fork of the Trinity River. The West Fork, which heads in Archer and Clay Counties, drains the northwestern part of Tarrant County. The Clear Fork heads in Parker County and drains the southwestern part of Tarrant County, joining the West Fork at Fort Worth. The eastern half of the county is drained by Sycamore, Village, Fossil, and Bear Creeks and other intermittent tributaries of the West Fork. The northeastern corner of Tarrant County and an area around Haslet are drained by Denton Creek, a tributary of the Elm Fork of the Trinity River.

The West Fork and Clear Fork are mature streams having fairly low but uniform gradients. From their entry into Tarrant County to their confluence at Fort Worth the gradients of the West Fork and Clear Fork are 4 and 7 feet per mile, respectively. The gradient of the West Fork from Fort Worth to Grand Prairie, however, is less than 2 feet per mile.

GEOLOGY

GEOLOGIC HISTORY

The geologic history of north-central Texas is somewhat complex. From Cambrian to Pennsylvanian time, sediments were deposited in the northwest-trending Fort Worth basin, the axis of which passes roughly through the northeastern part of Tarrant County. The Paleozoic era closed with considerable orogenic movement and westward tilting of the Pennsylvanian strata. This was followed by an uplift of the land surface which continued into the Triassic period. During the Triassic and Jurassic periods, withdrawal of the seas from the north-central Texas area and subsidence in the Gulf coast embayment resulted in a reversal in the direction of drainage. This led to extensive truncation of Pennsylvanian strata in the Fort Worth basin. At the close of the Jurassic period the rocks of Paleozoic age had been reduced nearly to a flat surface, which Hill (1901, p. 363) called the Wichita Paleoplain. This eroded surface was covered by marine sediments during the Cretaceous period, deposited along oscillating shorelines. Two major invasions of the seas during Cretaceous time are represented by the Comanche series and the younger Gulf series. Minor pulsations of the seas during Comanche time are indicated by the separate limestone and marl sequences of the Fredericksburg and Washita groups. At the close of the Cretaceous period, the seas withdrew gulfward, and the surface of Tarrant County rose above sea level. Throughout Tertiary time, except for minor periods of subsidence, the land surface was eroded and modified by streams. During Quaternary time the streams deposited alluvium, the older bodies of which are represented by terrace deposits above the alluviated valleys of the present streams.

Table 2 shows the thickness of the various geologic formations and gives a brief description of their character, topographic features, and water-bearing properties. The outcrops of the formations in Tarrant County are shown on plate 1.

ROCK UNITS AND THEIR WATER-BEARING PROPERTIES

Pennsylvanian System

Sedimentary rocks of Pennsylvanian age do not crop out in Tarrant County but are encountered in wells at depths that become progressively greater toward the east. These rocks are about 6,000 to 7,000 feet thick and are found at altitudes ranging from 60 feet below sea level at Lake Worth to 1,330 feet below sea level at Arlington. Throughout Tarrant County the truncated Pennsylvanian strata dip westward, in contrast to the succeeding Cretaceous strata which dip southeastward.

TABLE 2.--GEOLOGIC FORMATIONS IN TARRANT COUNTY, TEX.

System	Series and group		Formation and member	Thickness (feet)	Character of rocks	Topographic expression	Water-bearing properties
Quaternary	Recent and Pleistocene		Alluvium	0- 45	Sand, gravel, clay and silt.	Terrace and flood-plain deposits.	Small to moderate yields. Water unsatisfactory for domestic use unless treated.
Cretaceous	Gulf series		Eagle Ford shale	0-200	Bluish-black shale; thin sandstone and limestone beds.	Gently, rolling, treeless, black waxy soil. Forms Black Prairie belt.	Not known to yield water to wells in Tarrant County.
	Gulf series		Woodbine formation: Lewisville member	0-200+	Ferruginous sandstone, vari-colored clay and sandy clay, lignite, and gypsum.	Low hills, sandy soils, heavily wooded with oaks. Forms Eastern Cross Timbers belt.	Yields small supplies of water, generally more mineralized than water from Dexter member. Water in some areas highly mineralized.
	Gulf series		Woodbine formation: Dexter member	0-110	Crossbedded ferruginous fine-grained sandstone, clay, and sandy clay.	do	Important source of water for domestic supplies in eastern Tarrant County. Water typically is high in iron.
			Unconformity				
	Comanche series	Washita group	Grayson shale	0- 85	Yellowish-brown and grayish-blue fossiliferous marl, clay, and thin limestone.	Slope, generally covered with wash from the Woodbine formation.	Not known to yield water to wells in Tarrant County.
	Comanche series	Washita group	Main Street limestone	0- 45	Hard white limestone and marl.	Conspicuous and extensive upland prairie, westward facing escarpment.	Do.
	Comanche series	Washita group	Pawpaw formation	0- 40	Reddish-brown shale characterized by dwarfed pyrite fossils.	Narrow treeless slope separating terraces on Weno and Main Street formations.	Do.
	Comanche series	Washita group	Weno clay	0- 75	Bluish-gray marl and limestone, fossiliferous.	Terrace topography produced by limestones of middle and upper parts of the Weno.	Do.
	Comanche series	Washita group	Denton clay	0- 35	Blue-gray marl, marly ledges, shell agglomerate in upper part.	Grassy slope between resistant Fort Worth and Weno formations.	Do.
	Comanche series	Washita group	Fort Worth limestone	0- 35	Alternating limestone and marl, fossiliferous.	Upland prairie and black-land soils.	Do.
	Comanche series	Washita group	Duck Creek formation	0- 90	Impure limestone and marl, which is blue when fresh and straw-colored when weathered. Fossiliferous with distinctive ammonites.	Bench topography produced by lower limestone unit. Upper marl forms slope separating the Duck Creek from Fort Worth limestone.	Do.
			Unconformity				
	Comanche series	Fredericksburg group	Kiamichi formation	0- 40	Blue and brownish-yellow marl, thin limestone and sandstone flags.	Grassy slope separating scarps of Goodland and Duck Creek formations.	Do.
	Comanche series	Fredericksburg group	Goodland limestone	0-130	Chalky-white, fossiliferous limestone, and blue to yellowish brown marl.	Prominent glaring-white escarpment along streams.	Do.

TABLE 2.- GEOLOGIC FORMATIONS IN TARRANT COUNTY--CONTINUED

System	Series and group		Formation and member	Thickness (feet)	Character of rocks	Topographic expression	Water-bearing properties
retaceous		Fredericksburg group	Walnut clay	0- 28	Shell agglomerate fossiliferous clay and limestone, sandy clay, and black shale.	Forms conspicuous escarpment and waterfalls in western Cross Timbers belt.	Not knqw to yield water to wells in Tarrant County.
		Unconformity					
	Comanche series	Trinity group	Paluxy sand	140-190	Fine-grained sand, shale, sandy shale, lignite, and pyrite.	Sandy soil, hummocky topography, heavily wooded with oaks.	Source of supply for most households, smaller cities, and some industries.
			Glen Rose limestone	250-450	Fine-grained limestone, shale, marl, and sandstone.	Not exposed in Tarrant County.	Sands yield small supplies to wells in Fort Worth and western Tarrant County. Water too highly mineralized east of Fort Worth.
			Travis Peak formation	250-430	Coarse to fine-grained sandstone, red shale, red and yellow clay at base.	do	Principal aquifer in Tarrant County. Yields large supplies for municipal and industrial purposes. Water in upper sands east of Fort Worth may be highly mineralized.
		Major unconformity					
ennsylvanian	Undifferentiated			6,000-7,000	Gray, sandy shale, tight quartzitic sandstone, black limestone. Probably represents Strawn formation.	do	Not tested. Probably would not yield fresh water.

According to information furnished by oil companies and well-logging services, the Pennsylvanian rocks are probably of Strawn age and consist of black to gray shale, sandy shale, black limestone, and quartzitic sandstone. These rocks have not been tested as a source of water supply, but the interpretation of electric logs of oil tests, plus the reports by drillers that the sandstones are tightly cemented, indicates that the Pennsylvanian strata are not likely sources of ground water.

Cretaceous System

Comanche Series

The Cretaceous system has a maximum thickness of about 2,100 feet in Tarrant County, and is divided into the Comanche and the Gulf series. The Comanche series, which was named by Hill (1887, p. 298), includes eastward-dipping rocks of the Trinity, Fredericksburg, and Washita groups and forms the surface of the Western Cross Timbers and the Grand Prairie belts. Sedimentary rocks of the Comanche series are of near-shore or epicontinental origin and consist prevailingly of limestone. The Comanche series has a maximum thickness of about 1,600 feet at the eastern edge of Tarrant County.

Trinity group

The Trinity group, the outcrop of which underlies the Western Cross Timbers belt, includes the Travis Peak formation, the Glen Rose limestone, and the Paluxy sand and has a maximum thickness of about 1,070 feet in Tarrant County. The Travis Peak formation was deposited on an eroded surface by a shallow northward-transgressing sea. Seaward of this area of deposition, limestone, shale, and sand were deposited. These constitute the Glen Rose limestone, which thus represents the seaward facies of part of the Travis Peak formation, being deposited simultaneously to the north (Lozo, 1944, p. 518). Overlying the Glen Rose limestone is the Paluxy sand, which Scott (1930, p. 52) considers as a deposit of the regressive phase of the late Trinity seas.

The sands of the Trinity group are the most important sources of ground water in Tarrant County.

Travis Peak formation

The Travis Peak formation was divided by Hill (1901, p. 142) into the Sycamore sand member, the Cow Creek limestone member, and the Hensell sand member, in ascending order; but according to Hill (1901, p. 140) only the Sycamore and Hensell sand members or their equivalents are present in Tarrant County. The Travis Peak formation does not crop out in Tarrant County, and during the present investigation it was not found possible to differentiate the members of the Travis Peak on the basis of available drillers' and electric logs. The Travis Peak crops out in Parker County where the basal contact with the Pennsylvanian rocks is marked by a major unconformity. The upper contact with the Glen Rose limestone is apparently conformable, although the contact may be gradational and obscure.

The thickness of the Travis Peak formation increases downdip, ranging from about 250 feet at Lake Worth to 430 feet at Arlington (pl. 3). The formation maintains a fairly uniform thickness of about 370 to 400 feet along the strike (pl. 5).

The Travis Peak formation consists of a basal conglomerate of chert and quartz, grading upward into coarse-to fine-grained sand interspersed with varicolored shale. The sand strata generally are more thickly bedded in the lower part of the formation than in the upper part, and the percentage of sand varies laterally. Electric logs of 25 wells reveal that the total thickness of sand in the Travis Peak ranges from 80 feet in the western part of the county to 200 feet in the eastern part, or approximately one-third to one-half of the formation. Varicolored shale and clay, predominantly red, occur throughout the formation. The shale, which ranges in thickness from less than 5 feet to about 50 feet, grades vertically and laterally into sandy shale and sand, and individual shale beds cannot be correlated over a long distance (pls. 2 and 4).

The depth to the Travis Peak increases toward the east ranging from 550 feet at Lake Worth to 1,490 feet at Arlington. The average dip of the formation is about 40 feet per mile. West of Fort Worth the beds dip at a rate of 32 feet per mile whereas east of Fort Worth to the Dallas County line the beds dip at the rate of 44 feet per mile.

The Travis Peak formation is the most productive aquifer in the county. Although few wells are drilled to the Travis Peak, the quantity of ground water withdrawn from this formation greatly exceeds that taken from all other aquifers in the county. Water from the Travis Peak generally is satisfactory for most purposes, but the electric log of well F-79 in Arlington shows that the sands between 1,250 and 1,400 feet may contain highly mineralized water.

Glen Rose limestone

The Glen Rose limestone does not crop out in Tarrant County but is penetrated in wells drilled to the underlying Travis Peak formation. The Glen Rose consists primarily of calcareous sedimentary rocks of the neritic facies, but also sands and clays of the littoral facies. Local drillers include sands and shales of the upper part of the Travis Peak formation in the Glen Rose limestone but, as used in this report, the Glen Rose is restricted to the strata between and including the lowermost and topmost limestones in the Trinity group.

The Glen Rose limestone thickens eastward at a rate of about 7 feet per mile and southward at a rate of about 3 to 4 feet per mile. It ranges in thickness from about 250 feet in well D-6 to about 450 feet in well F-95, and has a reported maximum thickness of 595 feet in Dallas County, Adkins (1932, p. 308). The Glen Rose fingers out to the north (Adkins, 1932, p. 307) but thickens southward to about 800 feet near Waco. A moderate thickening southward in Tarrant County from 375 feet in well C-23 to 450 feet in well J-34 is shown in plate 5. The Glen Rose dips toward the southeast at a rate of about 40 feet per mile and is encountered at depths ranging from about 130 to 1,050 feet below the surface.

The Glen Rose is composed mainly of limestone but also contains sand, clay, sandy clay, and anhydrite. The limestones, which are medium to thick bedded, dense to highly porous, and in places sandy, are prominent in the lower part of the formation where they are interbedded with thin layers of clay and sandy clay. The limestones are thinner bedded in the upper part of the Glen Rose and are separated by beds of clay and sand which are considerably thicker than those in the lower part. The Glen Rose limestone becomes less calcareous and more sandy and clayey west of Fort Worth, thus marking the gradation from a neritic to a littoral environment. The sands in the Glen Rose west of Fort Worth are not as thickly bedded as those in the underlying Travis Peak formation and are generally fine grained and unconsolidated. A prominent sand bed underlying the uppermost limestone was found in well E-89 (pl. 3). Eastward the sand grades into a shaly sand and then into a limestone east of the county line; whereas westward toward the outcrop the limestone thins and the sand thickens to become a part of the Paluxy sand in Parker County. Anhydrite has been reported in varying thicknesses in the Glen Rose limestone. It ranges from a trace in well D-30 to a maximum reported thickness of 30 feet in well 5 at the city of Irving, Dallas County. Electric logs of the Irving well and others suggest that anhydrite may underlie a considerable part of Tarrant County.

The Glen Rose limestone is not an important source of water in Tarrant County. In the Lake Worth-Eagle Mountain Lake area the Glen Rose furnishes small quantities of water to wells for domestic use. East of Fort Worth wells were reported to obtain highly mineralized water from the Glen Rose. Highly mineralized water was reported by the driller to have been encountered in well F-89 at a depth of 1,120 to 1,140 feet. The drillers' logs and electric logs of nearby wells, however, reveal that the water is from a sand in the upper part of the Travis Peak formation. Electric logs indicate that the Glen Rose is not a source of fresh water in the eastern part of the county.

'aluxy sand

The Paluxy sand crops out in the northwestern part of the county; it forms the surface of the Western Cross Timbers belt in that area and underlies the rest of the county. About one-half to three-fourths of the Paluxy is sand; the remainder consists of clay, sandy clay, shale, lignite, silicified wood fragments, and nodules of pyrite. The sand is predominantly fine grained, homogeneous, in places crossbedded, and generally unconsolidated, although some sand strata are more indurated than others. In general, the coarse-grained sand is in the lower part of the Paluxy and grades upward into fine-grained sand with variable amounts of shale and clay. Mechanical analyses of 11 samples of sand from various horizons in the Paluxy indicate that approximately 80 percent of the sand is fine-grained. Weathered exposures of the clay generally are reddish and of an earthy texture; the unweathered clay generally is greenish and waxy.

The Paluxy sand ranges in thickness from 140 to 190 feet and averages about 160 feet in Tarrant County (pl. 5). Northward in Denton and Cooke Counties the Paluxy sand, Glen Rose limestone, and Travis Peak formation are not differentiated; southward the Paluxy thins and, according to A. M. Hull (personal communication), it is extremely thin at Whitney Dam, Hill County. The approximate altitude of the Paluxy sand in Tarrant County is shown in figure 4. The Paluxy dips uniformly . 7° S. at a rate ranging from 35 to 40 feet per mile and averaging 37 feet per mile. It is encountered at increasing depths eastward, reaching a maximum depth of about 900 feet in well F-95.

The Paluxy sand may be divided into upper and lower sand members. Electric logs in plate 3 show that the upper sand member maintains a relatively uniform thickness of about 55 feet despite variations of lithology over short distances. The sands in the upper part of the Paluxy are reported by drillers to be fine-grained and shaly. Most wells drilled to the Paluxy, therefore, are completed in

A14

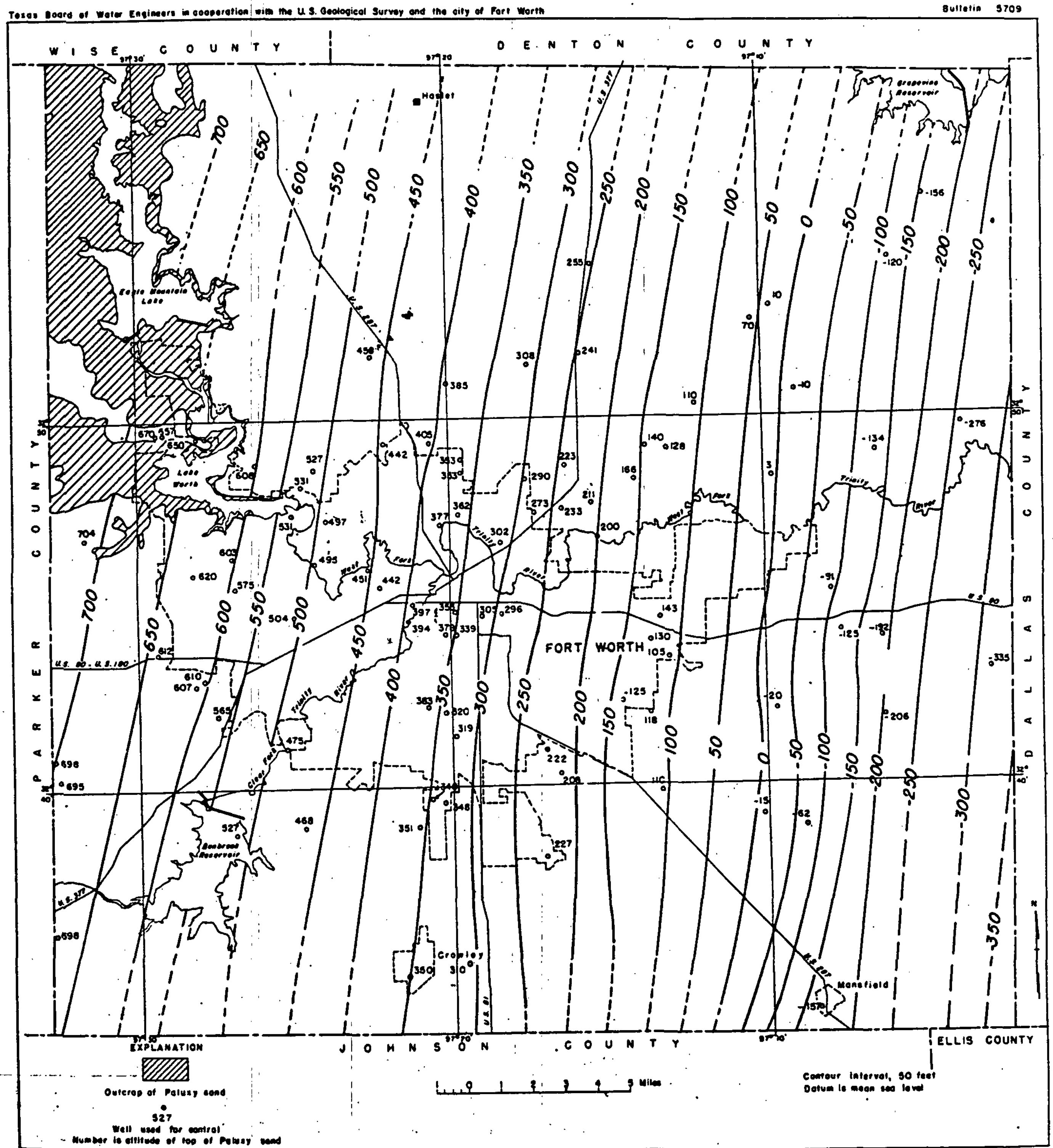

FIGURE 4.- Approximate altitude of the top of the Paluxy sand in Tarrant County, Tex.

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the lower sand member which ranges from 100 to 120 feet in thickness. The lower sand member generally consists of two separate and distinct sand strata, but the individual sand beds do not maintain constant thickness or lithology over long distances.

The following section, which includes parts of the Walnut clay and most of the upper sand member of the Paluxy sand, was measured at a railroad cut at the Texas Electric Service Company's steam generating plant on Eagle Mountain Lake.

	Feet
Walnut clay	
Limestone, yellowish-buff, fossiliferous, contains _Gryphaea marcoui_, _Exogyra texana_, and _Pecten irregularis_.	1.0
Limestone, fossiliferous, and yellowish-buff shale.	6.0
Shale, dark brown to yellow.	1.0
Limestone, fossiliferous.	3.0
Shale, yellowish-buff, fossiliferous.	0.6
Limestone, blue-gray, indurated, fossiliferous, becomes shaly upward. Some interbedded black fossiliferous shale at top.	11.0
Shale, black, fossils, weathers to grayish-blue.	1.0
Paluxy sand	
Sandstone, indurated, light gray; and interbedded sandy clay.	1.5
Shale, sandy, dark gray, weathers very light gray.	5.0
Sand, light gray, and sandy clay. Sand becomes indurated upward. Contains concretions and nodules of pyrite.	1.5
Sand, pink to light gray and tan, indurated. Contains secondary calcite near top and interbedded sandy shale in lower part becoming more shaly toward middle of zone. Botryoidal masses of pyrite scattered throughout. Considerable magnesite and pyrite in basal sandstone member.	9.0
Sand, coarse-to fine-grained, light gray to pink, ferruginous, crossbedded, in part massive and indurated.	8.0
Shale, bluish-gray, weathers light gray; unweathered surfaces have a waxy texture.	2.5
Sand, varicolored, medium to fine-grained, indurated to unconsolidated. Contains inclusions of pyrite and carbonaceous material. Contains considerable shale in upper 4 feet.	10.0
Total Paluxy measured	37.5
Total section measured	61.1

The Paluxy sand is second in importance only to the Travis Peak formation as a source of ground water in Tarrant County. Most of the wells that supply homes, smaller municipalities, and industries that require small quantities of water obtain ground water from the Paluxy. In the Lake Worth-Eagle Mountain Lake area and west to the county line, the Paluxy in places yields somewhat mineralized water, and many domestic supplies are obtained from the underlying Glen Rose limestone and Travis Peak formation.

Fredericksburg group

The Fredericksburg group in Tarrant County includes the Walnut clay, the Goodland limestone, and the Kiamichi formation, in ascending order. During the deposition of the Fredericksburg group, the seas were epineritic, or shallow neritic, the depths ranging between 7 and 20 fathoms. (See Lozo, 1944, p. 520.) The sedimentary rocks of the Fredericksburg group are mainly limestone and marl and lesser amounts of sandstone flags, shale, and shell aggregate. The thickness of the group ranges from 135 to 185 feet, increasing southward; and the rocks dip southeastward at a uniform rate of 38 feet per mile. The Kiamichi wedges out toward the south between the Goodland and the overlying Washita group.

A comparison of the lithologic properties of the Fredericksburg group observed at exposures in western Tarrant County and the characteristic resistivity of these rocks is shown in the electric log of well F-89 (fig. 5).

The Fredericksburg group is not a source of ground water in Tarrant County.

Walnut clay

The Walnut clay lies unconformably on the Paluxy sand. The Walnut crops out in the west-central and northwestern part of the county where it forms the conspicuous caprock or escarpment of the Western Cross Timbers belt. It also forms the stream bed in much of the Clear Fork of Trinity River, in parts of the West Fork of Trinity River, and in Marys Creek.

The Walnut clay has a relatively constant thickness of 28 feet in the subsurface. This conforms closely to the 27 feet assigned to the Walnut by Scott and Hawley (in Adkins, 1932, p. 330), but is considerably less than the 134 feet of Hill (1901, p. 208) and the 100 feet of Winton and Adkins (1919, p. 27), both of whom have included part of the Paluxy sand in the Walnut clay.

The Walnut clay referred to as fossil lime or caprock by local drillers consists mainly of a characteristic and readily identified shell agglomerate containing an abundance of Gryphaea marcoui and Exogyra texana. The lower part of the shell agglomerate has asymmetrical ripple marks of relatively large amplitude, an excellent exposure of which may be seen in the bed of the Clear Fork of Trinity River at Wheatland. It also contains brown sandy clay, thinly-bedded fossiliferous clay, black fissile shale, and iron-stained earthy limestone.

The Walnut clay is not a source of ground water in Tarrant County.

Goodland limestone

The Goodland limestone, which was named by Hill (1891, p. 88), is considered to be the North Texas equivalent of the Comanche Peak and Edwards limestones of of Central Texas. The Goodland, which conformably overlies the Walnut clay and is exposed over a considerable area between the West Fork and Clear Fork of Trinity River west of Fort Worth, forms large rounded hills that are capped by the Duck Creek formation, low round-topped buttes in the flood plains, or steep westward-facing escarpments. Characteristic of the outcrop of the Goodland is the sharp contact between the glaring white Goodland limestone and the gentle grassy slope of the overlying Kiamichi formation (pl. 6). The Goodland thins downdip but thickens southward, ranging in thickness from 70 feet in well C-23 to 130 feet in well J-34.

Reference 12

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GROUND WATER RESOURCES OF FORT WORTH AND VICINITY, TEXAS

By

W. O. George and N. A. Rose

25 pages

Prepared in cooperation with the United States Department of the Interior, Geological Survey.

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GROUND WATER RESOURCES OF FORT WORTH AND VICINITY, TEXAS

By

W. O. George and N. A. Rose

INTRODUCTION

Information regarding the ground-water resources of the City of Fort Worth and vicinity was compiled during the first half of April 1942, in response to a request from C. S. Clark, Chairman of the State Board of Water Engineers, in anticipation of an increased demand for ground water in suburban communities due to the influx of workers in war industries.

Records were obtained of 115 wells in or near the city. Most of these wells supply water to industrial plants, office buildings, hotels, public buildings, and suburban communities. Water-level measurements were made in a few of the unused wells. The well records are shown in the table on pages 10 to 19 and the logs of 6 of the wells are given in the table on pages 20 to 28. A table showing the chemical character of the water in the three aquifers from which water is obtained is given on page 8 . A map showing the locations of the wells with numbers corresponding to the numbers given in the text and in the tables is included.

The writers gratefully acknowledge the assistance of Lewis A. Quigley, Superintendent of the City Water Department of Fort Worth, W. R. Hardy, Sanitary Engineer of the City Health Department, Roy Taylor of the Layne-Texas Company, and E. H. Richardson, Q. D. Lewis, and J. E. Milliken, drilling contractors, who contributed much information from their files.

GEOLOGY AND ITS RELATION TO GROUND WATER

The geologic formations that yield water to wells in the Fort Worth area form part of the Trinity group of the Cretaceous system. The Cretaceous rocks lie uncomformably on the strata of the Pennsylvanian series. Below this contact no water of good quality has been found.

The geology and ground-water resources of the area were described by Hill 1/ during the early days of ground-water development in Tarrant County and later development is mentioned in a general geologic report by Winton and Adkins 2/. Evidence is presented by Winton and Adkins to show that the base of the Cretaceous in the vicinity of Fort Worth slopes almost due east at the rate of about 48 feet to the mile.

In ascending order, the formations of the Trinity group consist of the Travis Peak formation, the Glen Rose limestone, and the Paluxy sand. In the vicinity of Fort Worth these formations are not easily distinguished in drillers' logs.

Travis Peak formation:-- The sands of the Travis Peak formation are known as Trinity sands in northeast Texas and are often called Trinity sands in the Fort Worth area. The depths of wells drawing water from the Travis Peak sands, in this part of Texas, range from about 900 to 1,200 feet, depending upon the altitude of the land surface and the location of the well. The sands range in texture from fine-grained sand to coarse gravel; in most wells the coarse gravel has been found at the base of the formation. It is difficult to estimate the average thickness of the combined Travis Peak sands because in some wells there is no definite break between them and the sands of the Glen Rose formation. Moreover, very few of the wells for which records are available have reached the underlying Pennsylvanian strata to indicate that the full thickness of the formation has been penetrated. The thickness of the formation ranges from 125 to 150 feet, of which 75 to 100 feet may be classified as water-bearing sand or gravel. According to drillers' logs, blue and red shale and hard rock (probably limestone) are found between the sand and gravel beds.

1/ Hill, Robert T., Geography and Geology of the Black and Grand Prairies, Texas, 21st Ann. Rept. U. S. Geol. Survey, 1905.

2/ Winton, W. M., and Adkins, W. S., The Geology of Tarrant County, Texas. The University of Texas Bull. 1931, Division of Economic Geology, June 1, 1919.

Glen Rose limestone:-- The Glen Rose limestone is approximately 450 feet thick in the vicinity of Fort Worth. The depth of wells drawing water from this formation ranges from 500 to 900 feet. It is composed mainly of blue shale and hard limestone with a few beds of water-bearing sand. A lenticular character of the sands is indicated by the range of thicknesses shown in the drillers' logs. In the Armour Packing Company well (27) the thickest Glen Rose sand is logged as "very hard sand rock" from 772 feet to 796 feet. In the Texas and Pacific Railway Company well (74) "soft white sand" was found from 785 to 848, a thickness of 63 feet. The average total thickness of sand in the Glen Rose limestone is probably about 60 feet.

Paluxy sand:-- Paluxy sands are found at depths between 200 and 500 feet. In most drillers' logs they are described as "soft" or unindurated. The sands are interbedded with hard limestone and shale. The range of the total thickness of water-bearing sands in wells for which logs could be obtained is 85 to 100 feet.

HISTORY OF THE GROUND WATER DEVELOPMENT

The history of the development of ground water is rather closely related to the growth of the city. According to the U. S. Census the population of Fort Worth from 1890 to 1940 was as follows:

1890 - 23,076	1920 - 106,482
1900 - 26,688	1930 - 163,447
1910 - 73,312	1940 - 177,662

In 1890 the city was using river water pumped from the Trinity River at the junction of the West Fork and Clear Fork. The supply apparently was not altogether satisfactory, because in that year the city drilled a water well 3,350 feet in depth on Tucker's Hill to explore the ground-water resources. This well ([illegible]5) is described by Hill 3/, who states that each aquifer was cased as the drilling progressed and that no water was found below 1,300 feet.

3/ Hill, R. T., Op. cit., p. 576.

The data in the following table were compiled from Hill's description of the well.

Position, thickness and yield of sands penetrated by Tucker's Hill well and altitude of water levels above sea level

Sand	Depth to top of sand (feet)	Thickness of sand (feet)	Water level above (+) or below (-) surface (feet)	Altitude of water surface (feet)	Yield by natural flow (gallons per minute)
Upper Paluxy	300	-	-90	560	-
Lower Paluxy	425	-	-70	580	-
Upper Travis Peak	895	-	+48	698	170
Middle Travis Peak	1,035	-	+70	720	200
Lower Travis Peak	1,127(?)	39	+77	727	245
TOTAL DEPTH	3,350				

The exploratory well was never used but a number of deep wells were drilled and pumped as a result of the information it disclosed. The city has no record of any of its water wells, but it is said that a number of closely-spaced deep wells were drilled at the site of the river pumping plant. This presumably caused a severe decline in artesian water pressure at that point, although the total draft probably was not more than a million gallons a day. There are vague reports of difficulties with various types of pumps until the completion of the dam at Lake Worth in August 1914. Since then the city has used only surface water.

Although the greatest rate of growth in population took place in the decade between 1900 and 1910, the demand for ground water probably rose most rapidly in the decade between 1920 and 1930 when new industries using large quantities of ground water were developed and when most of the large office buildings and hotels were built. A large number of wells have been drilled since 1930 and the pumpage is probably greater now than it ever has been.

PUMPAGE

The heaviest withdrawals of ground water in the vicinity of Fort Worth are made in the industrial area north of the city where packing houses and oil refineries requiring a large volume of water depend almost entirely on wells. Nearly all of the downtown office buildings and the railroads are supplied from private wells. Next in order of importance is the pumpage by private water companies, laundries, distributors of dairy products and refrigeration plants. Estimates of the average amount of water pumped in thousands of gallons a day are given in the well tables (see pp. 10-19) for 79 of the wells listed. The estimates are based on information furnished by the owners of the wells or the engineers in charge of the pumping plants.

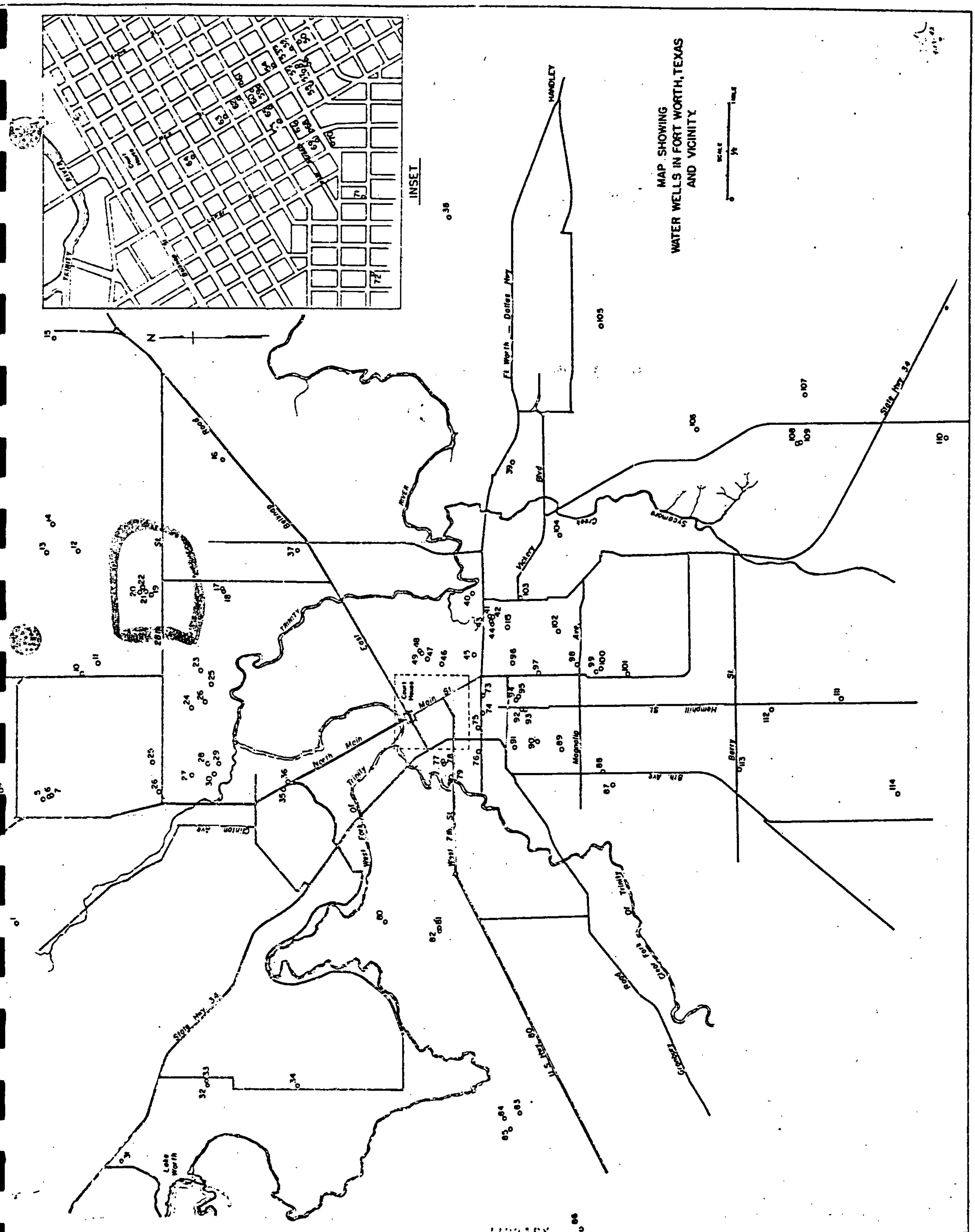
Although the inventory of water wells in the Fort Worth area is not complete, it is believed that very few wells yielding large amounts of water have been omitted. From these figures and from rough estimates of the amount of water pumped from wells not included in the records, it is estimated that the total pumpage in Fort Worth and its immediate vicinity will average from 7 to 7½ million gallons a day throughout the year. Of the 105 wells listed, 31 are believed to draw water from the Travis Peak formation, 15 from sands in the Glen Rose, and 59 from the Paluxy sands. Of the total pumpage about 5,000,000 gallons a day is estimated to come from Travis Peak sands, about 500,000 gallons a day from the Glen Rose, and about 2,000,000 gallons a day from the Paluxy sands. Most of the wells yielding water from the Travis Peak sands are in the industrial area north of Fort Worth. The Texas Pacific Railroad Terminal and a few hotels and office buildings in the downtown area are supplied from wells in the Travis Peak but their pumpage probably does not exceed a half million gallons a day. The pumpage from the sands of the Glen Rose limestone and the Paluxy sands is widely distributed. The private water companies are at the edges of the city and nearly all of them pump from the Paluxy sand.

Records of wells in the vicinity of Fort Worth, Tarrant County, Texas

Well No.	Distance from County Courthouse	Owner or Name	Driller	Date com-pleted	Depth of well (ft.)	Diam-eter of well (in.)	Geologic horizon
1	4½ miles northwest	Trinity Portland Cement Co.	Q. D. Lewis	1936	1,060	-	Travis Peak d/
2	4½ miles north	Sinclair Refining Co.	do.	1912	1,032	10	do.
3	4½ miles north	do.	do.	1912	1,035	12, 10	do.
4	4½ miles north	do.	do.	1912	1,053	10	do.
5	3¾ miles north	City Packing Co.	E. H. Richardson	1936	408	-	Paluxy
6	3½ miles north	Blue Bonnet Packing Co.	John Hall	1942	325	8	do.
7	do.	do.	do.	1942	325	8	do.
8	4½ miles north	U. S. Dept. of Civil Aeronautics	Q. D. Lewis	1918	1,060	18, 12	Travis Peak
9	do.	do.	do.	1918	1,047	10, 8	do.
10	3½ miles north	Consolidated Chemical Co.	-	-	420	12	Paluxy
11	do.	Texas & Pacific Refinery	Q. D. Lewis	-	1,000+	12	Travis Peak
12	3¾ miles northeast	Magnolia Refining Co.	do.	-	1,000+	10, 8	do.
13	4 miles northeast	do.	do.	-	800	10, 8	Glen Rose
14	4½ miles northeast	do.	do.	-	1,000+	10, 8	Travis Peak
15	5½ miles northeast	Texas Water Co., Birdville plant	-	-	430	10	Paluxy
16	3½ miles northeast	Texas Water Co., Jones plant	-	-	400	6	do.
17	2¼ miles northeast	Texas Water Co., Riverside plant	-	-	400	12½	do.
18	do.	Texas Water Co., Oakhurst plant	J. E. J. Milliken	1928	1,096	-	Travis Peak
19	3 miles northeast	[redacted]	Q. D. Lewis	1924	1,085	10	do.
20	do.	do.	do.	-	480	-	Paluxy
21	do.	do.	do.	-	480	-	do.
22	do.	do.	do.	-	480	-	do.
23	2½ miles northeast	Gulf Refining Co. No. 1	do.	1924	1,000+	10	Travis Peak
24	2½ miles north	Gulf Refining Co. No. 2	do.	1925	1,000+	10	do.
25	2 miles north	Ft. Worth Stock Yards	do.	-	766	10	Glen Rose

a/ T, turbine; A, air lift; C, cylinder; E, electric; S, steam. Number indicates horsepower.

b/ Average daily pumpage in thousands of gallons.


MAP SHOWING
WATER WELLS IN FORT WORTH, TEXAS
AND VICINITY
INSET
HANDLEY
Ft. Worth — Dallas Hwy
State Hwy. 34
U.S. Hwy. 80
North Main
Main St.
Hemphill St.
Berry St.
Magnolia Ave.
8th Ave.
Belknap
Victory Blvd.
Sycamore Creek
West 7th St.
West Fork Of Trinity
Clear Fork Of Trinity
Granbury Road
Lake Worth
Court House
N

008

Surface Water Plot

44

GENERAL HIGHWAY MAP

TARRANT COUNTY

TEXAS

PREPARED BY THE

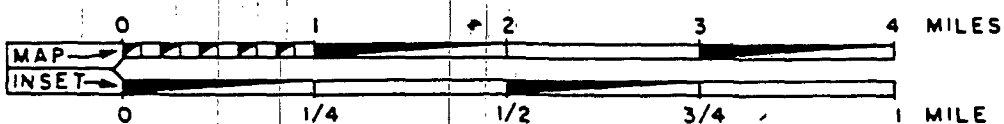
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALES



1963

1970 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1976

POLYCONIC PROJECTION NORTH AMERICAN DATUM

Control U. S Coast and Geodetic Survey and U. S. Geological Survey supplemented by U. S. Engineer's surveys, railroad alignments, state highway alignments and road inventory. Lateral roads and drainage plotted from aerial photographs

Compiled 1954 Field checked 1963 Photographs 1942-64

206

Reference 13

1 Mile

Plated

Site Name Trinity Valley Iron
Well Type PLATTED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	NO	WELLS	FOUND	—	—	—
—	.5	—	NO	WELLS	FOUND	—	—	—
32-21-3A	1	230	119	NA	D	1964	NA	Tom King
32-14-7A	2	File	Not	Found	—	—	—	—
" -7C	2	230	—	150-230	Irr	73	—	Charles Courtney
32-22-1D	2	220	—	140-220	D	82	—	Thompson
32-22-1C	2	200	100	0-200	D	79	—	Ralph Wright
32-13-9A 32-13-9AD	3 3	220 160	95 —	190-220 120-160	D D	65 —	— —	- MAX - EYSSEN
" 9F 9F Dup.	3 3	250 255	— —	160-250 155-255	I Irr	78 78	— —	- Merry SANDER
" -9B	3	241	90	174-178 190-194 201-208	D	69	—	PAGE
32-14-7E	3	80	40	—	Irr	80	—	Betty JONES
" -7D	3	180	18	0-180	D	—	—	WAYNE FAIR
" -7B	3	150	20	—	D	1986	—	Mauser
32-22-1B 32-22-1BD	3 3	422 638	342 490	— —	D I	1979 1983	— —	HYSON Schwab Co.
" -1A	3	File	Not	Found	—	—	—	—
32-13-9H	4	196	37	88-196	D	1984	—	Homer Dear
" -9C	4	222	—	160-222	Irr	1974	—	Jim C. BISHOP
" -9E	4	227	—	—	D	1975	—	FT. WORTH Well Service
32-14-7F	4	File	Not	Found	—	—	—	—
32-22-4A	4	140	62	110-130	D	1978	—	Simpson

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

2 mile
Platen

Site Name Trinity Valley Iron
Well Type PLATTED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	NO	WELLS	FOUND	—	—	—
—	.5	—	NO	WELLS	FOUND	—	—	—
32-21-3A	1	230	119	NA	D	1964	NA	Tom King
32-14-7A	2	File	NOT	FOUND	—	—	—	—
〃 -7C	2	230	—	150-230	Irr	73	—	Charles Courtney
32-22-1D	2	220	—	140-220	D	82	—	Thompson
32-22-1C	2	200	100	0-200	D	79	—	Ralph Wright
32-13-9A 32-13-9A D.	3 3	220 160	95 —	190-220 120-160	D D	65 —	— —	- MAX - EYSSEN
〃 9F 9F Dup.	3 3	250 255	— —	180-250 155-255	I Irr	78 78	— —	- Merry SANDER
〃 -9B	3	241	90	174-178 150-194 201-208	D	69	—	PAGE
32-14-7E	3	80	40	—	Irr	80	—	Betty JONES
〃 -7D	3	180	18	0-180	D	—	—	WAYNE FAIR
〃 -7B	3	150	20	—	D	1986	—	Mauser
32-22-1B 32-22-1B D.	3 3	422 638	342 490	— —	D I	1979 1983	— —	HYSON Schwab Co.
〃 -1A	3	File	NOT	FOUND	—	—	—	—
32-13-9H	4	196	37	88-196	D	1984	—	Homer Dear
〃 -9C	4	222	—	160-222	Irr	1974	—	Jack Bishop
〃 -9E	4	227	—	—	D	1975	—	FT. WORTH Well Service
32-14-7F	4	File	NOT	FOUND	—	—	—	—
32-22-4A	4	140	62	110-130	D	1978	—	Simpson

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Send original copy by
certified mail to the
Texas Water Development Board
P. O. Box 13087
Austin, Texas 78711

State of Texas

WATER WELL REPORT

AP#3

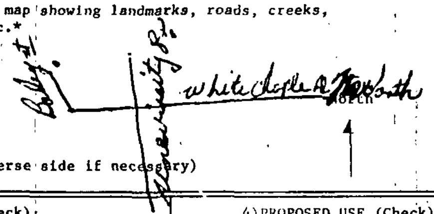
For TWDB use only
Well No. 32-14-7C
Located on map yes
Received: 7 3

1) OWNER:
Person having well drilled [redacted] (Name) Address [redacted] (Street or RFD) (City) (State)

Landowner Same (Name) Address (Street or RFD) Ft Worth Texas (City) (State)

2) LOCATION OF WELL:
County Tarrant, 1 1/2 miles in W (N.E., S.W., etc.) direction from Ft Worth Texas (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______
Block ______ Survey ______
Abstract No. ______
(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check):
✓ New Well | Deepening
Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal
Irrigation | Test Well | Other
Yard

5) TYPE OF WELL (Check):
✓ Rotary | Driven | Dug
Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 230 ft. Depth of completed well 230 ft. Date drilled 11-1-73

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	6	SURFACE
6	22	CLAY & Gravel BROWN
22	98	LIME STONE WITH STRCKS OF SHALE GRAY
98	106	SHALE BLUE
106	165	LIME STONE GRAY
165	225	SAND WITH STRCKS OF SHALE GRAY
225	230	BLUE SHALE

(Use reverse side if necessary)

9) Casing:
Type: Old ✓ New Steel ✓ Plastic Other
Cemented from 0 ft. to 10 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4"	0	230	200

10) SCREEN:
Type ______
Perforated ✓ Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
4"	150	230	5"

7) COMPLETION (Check):
Straight wall ✓ Gravel packed Other
Under reamed Open Hole

8) WATER LEVEL:
Static level ______ ft. below land surface Date ______
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., ______ ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Bailer test 15 gpm with 40 ft. drawdown after 3 hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Posey Drilling Co. (Type or Print) Water Well Drillers Registration No. 1331

ADDRESS 280 W Highland St (Street or RFD) Grapevine Texas 76051 (City) (State)

(Signed) Albert J Posey (Water Well Driller) Same (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDB-WD-8

Send original copy by certified mail to the
Texas Department of Water Resources
P. O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

For TDWR use only
Well No. 32-22-10
Located on map Yes
Received: C.F.S.

1) OWNER [redacted] (Name) Address River Oaks (Street or RFD) (City) Tx (State) (Zip)

2) LOCATION OF WELL:
County Tarrant 1 miles in S (N.E., S.W., etc.) direction from River Oaks (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

☐ See attached map. #1

3) TYPE OF WORK (Check):
☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☑ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other ______

5) DRILLING METHOD (Check):
☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☑ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other ______

6) WELL LOG:
Date drilled 12-82

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface	
	0	220

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☑ Gravel Packed ☐ Other ______
If Gravel Packed give interval . . . from 80 ft. to 220 ft.

From (ft.)	To (ft.)	Description and color of formation material
0	5	Topsoil
5	25	Yellow Clay
25	65	Course Sand
65	120	Lime
120	170	Blue Shale
170	220	Medium Sand

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4½	N	Plastic	0	220	
		Perfs	140	220	7/16

CEMENTING DATA
Cemented from 0 ft. to 80 ft.
Method used ______
Cemented by ______ (Company or Individual)

9) WATER LEVEL:
Static level ______ ft. below land surface Date ______
Artesian flow ______ gpm. Date ______

10) PACKERS: Type Depth
None

RECEIVED
JAN 31 1983
DEPT. OF WATER RESOURCES

11) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 180 ft.
2 H.P

12) WELL TESTS:
☐ Type Test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Not tested

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☑ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Mark Romine (Type or Print) Water Well Drillers Registration No. 2154

ADDRESS Box 7 (Street or RFD) Rhome (City) Tx (State) 76078 (Zip)

(Signed) Mark Romine (Water Well Driller) Romine Drilling Co (Company Name)

... chemical analysis, and other pertinent information, if available.

Send original copy by certified mail to the Texas Department of Water Resources
P. O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

For TDWR use only
Well No. 32-22-1C
Located on map yes
Received: cf-9.

1) OWNER [redacted] (Name) Address [redacted] (Street or RFD) Ft. Worth (City) TX (State) (Zip)

2) LOCATION OF WELL:
County TARRANT city miles in ______ (N.E., S.W., etc.) direction from ______ (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

map wise co. 19-50-5K ☐ See attached map. MARKED #3 TEXAS MAP

3) TYPE OF WORK (Check):
☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☑ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other ______

5) DRILLING METHOD (Check):
☑ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other ______

6) WELL LOG:
Date drilled 10-23-79

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface	200

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☑ Gravel Packed ☐ Other ______
If Gravel Packed give interval . . . from 0 ft. to 80 ft.

From (ft.)	To (ft.)	Description and color of formation material
0-	20	Rock, Cleachey
20-	80	Shale, Rock
80-	200	Sand, Rock, Shale

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	To	Gage Casing Screen
4"	New	PVC-Perf.	0-	200	

CEMENTING DATA
Cemented from 0 ft. to 60 ft.
Method used manuel
Cemented by E. K. Lewis + Sons (Company or Individual)

9) WATER LEVEL:
Static level 100 ft. below land surface Date 10-23-79
Artesian flow NO gpm. Date ______

10) PACKERS: Type Depth

11) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., ______ ft.

12) WELL TESTS:
☐ Type Test: ☑ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 15 gpm with ______ ft. drawdown after ______ hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☑ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME E. R. Lewis + Sons (Type or Print) Water Well Drillers Registration No. 1194

ADDRESS Rt. 1 Box 268, PARADise (Street or RFD) (City) TX (State) 76073 (Zip)

(Signed) E. R. Lewis (Water Well Driller) E. R. Lewis + Sons (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TDWR-0392 (Rev. 1-12-79)

DEPARTMENT OF WATER RESOURCES COPY

3 mile

plotted

Site Name Trinity Valley Iron
Well Type PLATTED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
32-21-3A	1	230	119	NA	D	1964	NA	Tom King
32-14-7A	2	File	Not	Found	—	—	—	—
11 -7C	2	230	—	150-230	Irr	73	—	Charles Courtney
32-22-1D	2	220	—	140-220	D	82	—	Thompson
32-22-1C	2	200	100	0-200	D	79	—	Ralph Wright
32-13-9A 32-13-9A D.	3 3	220 160	95 —	190-220 120-160	D D	65 —	— —	- MAX - EYSSEN
11 9F 9F Dup.	3 3	250 255	— —	180-250 155-255	I Irr	78 78	— —	- Merry SANDER
11 - 9B	3	241	90	174-178 150-194 201-208	D	69	—	PAGE
32-14-7E	3	80	40	—	Irr	80	—	Betty JONES
11 - 7D	3	180	18	0-180	D	—	—	Wayne Fair
11 - 7B	3	150	20	—	D	1986	—	Mauser
32-22-1B 32-22-1B D.	3 3	422 638	342 490	— —	D I	1979 1983	— —	HYSON Schwab Co.
11 -1A	3	File	Not	Found	—	—	—	—
32-13-9H	4	196	37	88-196.	D	1984	—	Homer Dear
11 - 9C	4	222	—	160-222	Irr	1974	—	Jack Bishop
11 - 9E	4	227	—	—	D	1975	—	FT. WORTH Well Service
32-14-7F	4	File	Not	Found	—	—	—	—
32-22-4A	4	140	62	110-130	D	1978	—	Simpson

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

'18

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas JUN 17 1980

WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

For TDWR use only
Well No. 32-14-7E
Located on map YES
Received: TH

1) OWNER [redacted] (Name) Address [redacted] (Street or RFD) Ft. Worth Texas (City) (State) (Zip)

2) LOCATION OF WELL:
County Tarrant 0 miles in (N.E., S.W., etc.) direction from in Ft.Worth (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

☒ See attached map. Map on 32-13-1L

3) TYPE OF WORK (Check):
☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☐ Domestic ☐ Industrial ☐ Public Supply ☒ Irrigation ☐ Test Well ☐ Other

5) DRILLING METHOD (Check):
☒ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other

6) WELL LOG:

Date drilled 5-20-80

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
	Surface	
6 3/4	0	80

From (ft.)	To (ft.)	Description and color of formation material
0-10		topsoil
10-20		brown clay
20-30		brown clay
30-40		gravel
40-50		gravel & gray clay
50-80		gray clay & rock

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other
If Gravel Packed give interval . . . from 5 ft. to 80 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	To	Gage Casing Screen
4	N	plastic	0	80	40

CEMENTING DATA
Cemented from 0 ft. to 5 ft.
Method used poured on outside
Cemented by Ft. Worth Well Drilling (Company or Individual)

9) WATER LEVEL:
Static level 40 ft. below land surface Date 5-20-80
Artesian flow ______ gpm. Date ______

10) PACKERS: Type Depth
none

11) TYPE PUMP:
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 75 ft.

12) WELL TESTS:
☐ Type Test: ☒ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 4 gpm with 20 ft. drawdown after 1 hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☐ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Johnny L. Bobo (Type or Print) Water Well Drillers Registration No. 1983

ADDRESS 311 Calgary (Street or RFD) Azle (City) Texas (State) 76020 (Zip)

(Signed) Johnny Bobo (Water Well Driller) Ft. Worth Well Drilling (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TDWR-0392 (Rev. 1-12-79)

DEPARTMENT OF WATER RESOURCES COPY

010

7D

Send original copy by certified mail to the
Texas Water Development Board
P. O. Box 13087
Austin, Texas 78711

State of Texas

WATER WELL REPORT

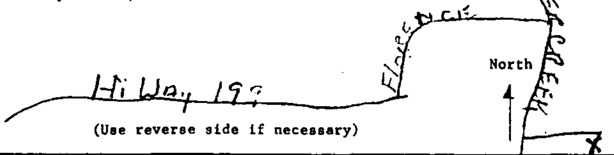
For TWDB use only
Well No. 32-14-7D
Located on map yes
Received: 7/6

1) OWNER:
Person having well drilled [redacted] (Name) Address [redacted] (Street or RFD) Saginaw (City) Tx (State)

Landowner Same (Name) Address Same (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant, ______ miles in ______ (N.E., S.W., etc.) direction from ______ (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______
Block ______ Survey ______
Abstract No. ______
(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check): New Well (circled) | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check): Domestic (circled) | Industrial | Municipal | Irrigation | Test Well | Other

5) TYPE OF WELL (Check): Rotary (circled) | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 180' ft. Depth of completed well 180' ft. Date drilled ______

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	70	Gray (Vary Hard) Clay
70	110	Silver and Gray Sand + Clay
110	140	Brownish Clay ~~Clay~~ And White Looking Sand
140	180 (TD)	Silver + Gray Sand + Clay

(Use reverse side if necessary)

9) Casing:
Type: Old New (circled) Steel Plastic (circled) Other
Cemented from 0 ft. to 180 ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4 1/2	0	180'	40

10) SCREEN:
Type ______
Perforated (circled) Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
4 1/2"	0	180	1/8" x 1'

7) COMPLETION (Check):
Straight wall | Gravel packed (circled) | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level 18 ft. below land surface Date ______
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., 153 ft. below land surface. (Submersible) (4 in)

11) WELL TESTS:
Was a pump test made? Yes No (circled) If yes, by whom?
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Bailer test ______ gpm with ______ ft. drawdown after ______ hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

Ed Maynor

NAME Fort Worth Well Service Inc (Type or Print) Water Well Drillers Registration No. 1327

ADDRESS 2521 White Settlement Rd. (Street or RFD) Fort Worth (City) Texas (State)

(Signed) C. L. Maynor (Water Well Driller) Fort Worth Well Service, Inc (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-WD-6

011

9F

GW 7

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711	State of Texas WATER WELL REPORT	For TWDB use only Well No. 32-13-9F Located on map yes Received: 78 Form GW 8 Form GW 9

1) OWNER:
Person having well drilled [redacted] (Name) Address Ft. Worth Tx (Street or RFD) (City) (State)

Landowner Same (Name) Address Same (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant Labor ______ League ______ Abstract No. ______

NW¼ NE¼ SW¼ SE¼ of Section ______ Block No. ______ Survey ______
(Circle as many as are known)

miles in ______ (NE., SW., etc.) direction from White Settlement (Town)

NORTH

Fort Worth

#7 on Tarrant Co. Map

32 ... 9 50

Sketch map of well location with distances from adjacent section or survey lines, and to landmarks, roads, and creeks.

3) TYPE OF WORK (Check):
New Well ☑ Deepening ☐
Reconditioning ☐ Plugging ☐

4) PROPOSED USE (Check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

5) TYPE OF WELL (Check):
Rotary ☑ Driven ☐ Dug ☐
Cable ☐ Jetted ☐ Bored ☐

6) WELL LOG:
Diameter of hole 6 1/4 in. Depth drilled 250 ft. Depth of completed well 250 ft. Date drilled 4-78

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material	From (ft.)	To (ft.)	Description and color of formation material
0	40	Sand & Gravel			
40	190	Grey Shale & lime			
190	250	Red Sand & Grey Shale			
					(Use reverse side if necessary)

7) COMPLETION (Check):
Straight wall ☐ Gravel packed ☑ Other ☐
Under reamed ☐ Open hole ☐

8) WATER LEVEL:
Static level ______ ft. below land surface Date ______
Artesian pressure ______ lbs. per square inch Date ______

9) CASING:
Type: old ☐ New ☑ Steel ☐ Plastic ☑ Other ☐
Cemented from 150' ft. to 100' ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4 1/2	+1	250	Sch 40

10) SCREEN:
Type ______
Perforated ☐ Slotted ☐

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot size
4 1/2	180	260	1/16"

11) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes by whom? ______
Yield: ______ gpm with ______ ft. drawdown after ______ hrs
Bailer test ______ gpm with ______ ft. drawdown after ______ hrs
Artesian flow ______ gpm Date ______
Temperature of water ______
Was a chemical analysis made? ☐ Yes ☐ No
Did any strata contain undesirable water? ☐ Yes ☐ No
Type of water? ______ depth of strata ______

12) PUMP DATA:
Manufacturer's Name ______
Type ______ H.P. ______
Designed pumping rate ______ gpm ☐ gph ☐
Type power unit ______
Depth to bowls, cylinder, jet, etc., ______ ft. below land surface.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Richard Young (Type or Print) Water Well Drillers Registration No. 1499

Address Box 7 (Street or RFD) Rhome (City) Tx (State)

(Signed) Richard Young (Water Well Driller) Young Drlg Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

012

9F

Dup

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 32-13-9F
Located on map 41
Received: 25

1) OWNER:
Person having well drilled [redacted] Address [redacted] Ft Worth, Texas
(City) (State)

Landowner Same Address
(Name) (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County TARRANT , ___ miles in NE direction ~~from~~ Ft Worth
(N.E., S.W., etc.) (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

at address

North

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ___ League ___

Block ___ Survey ___

Abstract No. ___

(NW¼ NE¼ SW¼ SE¼) of Section ___

3) TYPE OF WORK (Check):
New Well Deepening
Reconditioning Plugging

4) PROPOSED USE (Check):
Domestic Industrial Municipal
Irrigation Test Well Other

5) TYPE OF WELL (Check):
Rotary Driven Dug
Cable Jetted Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 255 ft. Depth of completed well 255 ft. Date drilled 4-26-78

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	15	Top Sand
15	30	yellow clay
30	55	Gravel
55	155	Blue clay
155	255	Sand

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other

Cemented from 0 ft. to 100 ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4	0	255	200 lb.

10) SCREEN:
Type ___

Perforated Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
~~155~~ 4	155	255	1/8

7) COMPLETION (Check):
Straight wall Gravel packed Other
Under reamed Open Hole

8) WATER LEVEL:
Static level ___ ft. below land surface Date ___

Artesian pressure ___ lbs. per square inch Date ___

Depth to pump bowls, cylinder, jet, etc., 168 ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?

Yield: ___ gpm with ___ ft. drawdown after ___ hrs.

Bailer test ___ gpm with ___ ft. drawdown after ___ hrs.

Artesian flow ___ gpm

Temperature of water ___

12) WATER QUALITY:
Was a chemical analysis made? Yes No

Did any strata contain undesirable water? Yes No

Type of water? ~~Other~~ Pal[illegible] Depth of strata ___

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME JOHN W KRAATZ JR Water Well Drillers Registration No. 1327
(Type or Print)

ADDRESS 3909 Woodline Ft Worth Texas 76117
(Street or RFD) (City) (State)

(Signed) E.Z. Mayor Johnny's Pump Ser
(Water Well Driller) (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-WD-8

03

Send original copy by
certified mail to the
Texas Water Development Board
P. O. Box 12386
Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 32-17-76
Located on map yes
Received: 70

1) OWNER:
Person having well drilled [redacted] (Name) Address [redacted] Fort Worth (Street or RFD) (City) (State) Tex.

Landowner Same (Name) Address ______ (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant, In Fort Worth City limits miles in ______ direction from ______ (N.E., S.W., etc.) (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

North

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______

Block ______ Survey ______

Abstract No. ______

(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check):	4) PROPOSED USE (Check):	5) TYPE OF WELL (Check):
New Well ✓ Deepening	Domestic ✓ Industrial Municipal	Rotary ✓ Driven Dug
Reconditioning Plugging	Irrigation Test Well Other	Cable Jetted Bored

6) WELL LOG:
Diameter of hole 7 7/8 in. Depth drilled 241 ft. Depth of completed well 212 ft. Date drilled 11-26-69

All measurements made from ______ ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	12	Brown Soil
12	15	Wh. Clay
15	37	Gray Shale
37	70	white rock
70	85	gr. Shale
85	97	Wh. Sand
97	105	Wh. Clay
105	125	Wh. Sand
125	132	red Clay
132	142	Wh. Sand
142	150	Clay & rock

(Use reverse side if necessary)

9) Casing:
Type: Old New Steel Plastic Other
Cemented from 0 ft. to 212 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
6 5/8	0	212	

10) SCREEN:
Type
Gun Perforated Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
	174	178	5 shots
	190	194	5 "
	201	208	8 "

7) COMPLETION (Check):
Straight wall ✓ Gravel packed Other
Under reamed Open Hole ✓

8) WATER LEVEL:
Static level 90 ft. below land surface Date 11-26-69
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., 189 ft.
below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Bailer test 30 gpm with 20 ft. drawdown after 1/2 hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME WADE TICKNER (Type or Print) Water Well Drillers Registration No. 547

ADDRESS 1511 W. Sanford (Street or RFD) Arlington (City) Tex. (State)

(Signed) Wade Tickner (Water Well Driller) Tickner Drilling Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-GW-53

014

32·13·9A

File original copy with Texas Water Commission P. O. Box 12311, Capitol Station Austin, Texas 78711	State of Texas **DRILLERS LOG AND WELL DATA REPORT**	For use by TWC only Well No. Located on map By Date Map no.

1) Well Owner: [redacted] (Name) [redacted] (Street or RFD) Ft. Worth, Texas (City) (State)

2) Land Owner: ______ (Name) ______ (Street or RFD) ______ (City) ______ (State)

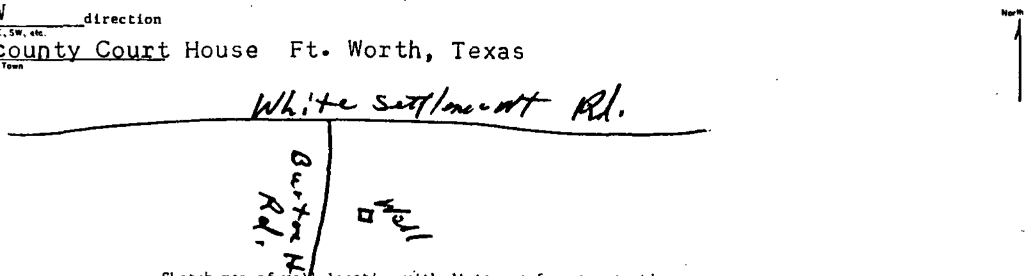
3) Intended use: Industrial ☐ ; Municipal ☐ ; Irrigation ☐ ; Other Home use

4) Location of well: County Tarrant Labor ______ League ______ Abstract No. ______

NW¼ NE¼ SW¼ SE¼ (Circle as many as are known) of Section ______ Block No. ______ Survey ______

5½ miles in W (NE, SW, etc.) direction

from Tarrant county Court House Ft. Worth, Texas (Town)



Sketch map of well location with distances from two section or survey lines, and to landmarks, roads, and creeks.

DRILLERS LOG OF WELL

Method of drilling: Rotary Diameter of hole ~~XXXXX~~ 8 3/4 in. Date drilled Sept 28,29, 1965

All measurements made from ______ ft. above ground level.

From (ft)	To (ft)	Description and color of formation material	From (ft)	To (ft)	Description and color of formation material
0	15	Brown loam			
15	21	Gravel			
21	92	Lime & shale			
92	176	Red blue & gray shale broken with sand			
176	226	Sand			
226	230	Gray & black shale			

(Use continuation sheets if necessary)

COMPLETION DATA

COMPLETION

Straight wall ☐

Under reamed ☐

Gravel packed ☒

Open hole ☐

Other ______

CASING

Type: Old ☐ New ☒

Cemented from ______ ft. to ______ ft.

Diameter (inches)	Setting from (ft)	Setting to (ft)
6 3/8"	0	168
4 1/2"	125	230

~~SCREEN~~

Type ______

Perforated ☒ Slotted ☐

Diameter (inches)	Setting from (ft)	Setting to (ft)
4½	190	220

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

Alfred L. Watts (Signature) Watts Drilling Company (Company Name) Reg. No. 177

Please attach electric log, chemical analysis, and other pertinent information if available.

If well was tested by your company or if you installed the permanent pump please complete the following:

WATER LEVEL AND PUMP DATA

Static water level 95 ft. below ground level

Pumping level

feet	hours	gpm

Pump type Submersible

Designed pumping rate 15 gpm ☒ gph ☐

Type power unit Electrical

Horsepower 1½

Depth to bowls, cylinder, jet, etc., 192 ft. below pump base.

Name of contractor testing well or installing permanent pump if other than your company: ______

C-34 (62-4)

015

32.13 · 9A

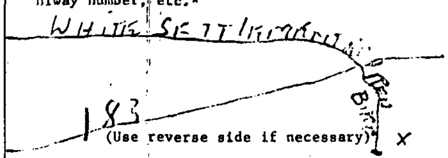
Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711	State of Texas WATER WELL REPORT	For TWDB use only Well No. 32-13-9A Located on map yes Received: 76

1) OWNER:
Person having well drilled [redacted] (Name) Address [redacted] (Street or RFD) Ft Worth, (City) Texas (State)

Landowner [redacted] (Name) Address [redacted] (Street or RFD) Ft Worth, (City) Texas (State)

2) LOCATION OF WELL:
County Tarrant, ______ miles in ______ (N.E., S.W., etc.) direction from ______ (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______
Block ______ Survey ______
Abstract No. ______
(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check): New Well (circled) Deepening Reconditioning Plugging

4) PROPOSED USE (Check): Domestic (circled) Industrial Municipal Irrigation Test Well Other

5) TYPE OF WELL (Check): Rotary (circled) Driven Dug Cable Jetted Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 160 ft. Depth of completed well 160 ft. Date drilled ______
All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0-40		Brownish Clay
40-85		Gray and Silver Looking Clay & Sand
85-115		Rusty looking Clay and Sand
115-145		White and Silver Clay & Sand
145-160		(TD) A Fine white sand

(Use reverse side if necessary)

9) Casing:
Type: Old New (circled) Steel Plastic (circled) Other
Cemented from 0 ft. to 160 ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4½	0	160	40

10) SCREEN:
Type ______
Perforated (circled) Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
4½	120	160	1/8" x 1'

7) COMPLETION (Check):
Straight wall Gravel packed (circled) Other
Under reamed Open Hole

8) WATER LEVEL:
Static level ______ ft. below land surface Date ______
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., 110 ft. below land surface. (SUBMERSIBLE) (4 in)

11) WELL TESTS:
Was a pump test made? Yes No (circled) If yes, by whom?
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Bailer test ______ gpm with ______ ft. drawdown after ______ hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Edward Maynor (Type or Print) Water Well Drillers Registration No. 1327

ADDRESS 2521 White Settlement Road (Street or RFD) Fort Worth (City) Texas (State)

Signed) E. L. Maynor (Water Well Driller) Fort Worth Well Service Inc. (Company Name)

ease attach electric log, chemical analysis, and other pertinent information, if available.

ldditional instructions on reverse side.

WD-8

016

Send original copy by
certified mail to the
Texas Department of Water Resources
P. O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

For TDWR use only
Well No. 32-22-1B
Located on map YES
Received: TH

1) OWNER [redacted] (Name) Address [redacted] (Street or RFD) Ft Worth (City) Texas (State) (Zip)

2) LOCATION OF WELL:
County TARRANT, 4 miles in S (N.E., S.W., etc.) direction from Downtown FortWorth (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

☑ See attached map.

3) TYPE OF WORK (Check):
☑ New Well ☐ Deepening
☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☑ Domestic ☐ Industrial ☐ Public Supply
☐ Irrigation ☐ Test Well ☐ Other ______

5) DRILLING METHOD (Check):
☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored
☐ Air Rotary ☑ Cable Tool ☐ Jetted ☐ Other ______

6) WELL LOG:
Date drilled 10-28-78

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6	Surface	422

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☑ Gravel Packed ☐ Other ______
If Gravel Packed give interval . . . from 422 ft. to 121 ft.

From (ft.)	To (ft.)	Description and color of formation material
Top	12	Brown Clay
12	24	Yellow Clay
24	176	Lime Rock
176	212	Shale
212	318	Fossil lime
318	337	Sand
337	341	Shale
341	362	Sand
362	369	Shale
369	416	Sand
416	422	Shale

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4	New	Steel	Top	422	125

CEMENTING DATA
Cemented from 121 ft. to Top ft.
Method used Hand Poured
Cemented by J D Wood (Company or Individual)

9) WATER LEVEL:
Static level 342 ft. below land surface Date 11-5-78
Artesian flow ______ gpm. Date ______

10) PACKERS: Type Depth

11) TYPE PUMP:
☐ Turbin ☐ Jet ☑ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 385 ft.

12) WELL TESTS:
☐ Type Test: ☐ Pump ☑ Bailer ☐ Jetted ☐ Estimated
Yield: 25 gpm with 0 ft. drawdown after 1 hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME John Dean Wood (Type or Print) Water Well Drillers Registration No. 1894

ADDRESS 1722 Las Vegas Trail N (Street or RFD) Ft Worth (City) Texas (State) 76108 (Zip)

(Signed) John Dean Wood (Water Well Driller) J D Wood Drilling (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TDWR-0392

Send original copy by certified mail to the Texas Department of Water Resources
P. O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

P

Texas Water Well Drillers Board
P. O. Box 13087
Austin, Texas 78711

1) OWNER Schwab + Sage Bldg. Corp. (Name) Address 10920 Indian Tr. Suite 205 (Street or RFD) Dallas (City) Tx (State) (Zip)

2) LOCATION OF WELL:
County Tarrant 1 miles in S (N.E., S.W., etc.) direction from Ft. Worth (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______
☑ See attached map.

3) TYPE OF WORK (Check):
☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☐ Domestic ☑ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other

5) DRILLING METHOD (Check):
☑ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other

6) WELL LOG:
Date drilled 10/10/83

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface	650

7) BOREHOLE COMPLETION:
☑ Open Hole ☑ Straight Wall ☐ Underreamed
☐ Gravel Packed ☐ Other Gun Perforated
If Gravel Packed give interval . . . from ______ ft. to ______ ft.

From (ft.)	To (ft.)	Description and color of formation material
0	2	Top Soil - Black Gumbo
2	16	Yellow Clay
16	32	Grey Shale
32	476	Lime + Grey Shale
476	482	Soft Blue Shaley Sand
482	530	Sand - Medium
530	535	Blue Shale
535	587	Sand + Shale (Broken)
587	603	Blue Shale
603	650	Hard Limey Sand

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	To	Gage Casing Screen
4 1/2	N	Steel	0	638	.188

CEMENTING DATA
Cemented from 0 ft. to 638 ft.
Method used Pressure
Cemented by Denny Stone (Company or Individual)

9) WATER LEVEL:
Static level 490 ft. below land surface Date 10/24/83
Artesian flow ______ gpm. Date ______

10) PACKERS: Type Depth

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WATER RESOURCES

11) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 550 ft.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☑ No

12) WELL TESTS:
☐ Type Test: ☐ Pump ☐ Bailer ☑ Jetted ☐ Estimated
Yield: 6 gpm with 30 ft. drawdown after ____ hrs.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

COMPANY NAME E. C. Stone Drlg. Co. (Type or Print) Water Well Driller's License No. 1299

ADDRESS 1512 Inverness (Street or RFD) Mansfield (City) Tx (State) 76063 (Zip)

(Signed) Denny Stone (Licensed Water Well Driller) (Signed) ______ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TDWR use only
Well No. 32-22-1B
Located on map yes C.F.S.

TDWR-0392 (Rev. 5-27-82)

DEPARTMENT OF WATER RESOURCES COPY

018

Please use black ink.
Send original copy by certified mail to the Texas Water Commission
P.O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

Texas Water Well Drillers Board
P. O. Box 13087
Austin, Texas 78711

1) OWNER [redacted]
(Name) (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL:
County Forrest ________ miles in 4 Miles (N.E., S.W., etc.) direction from Ft Worth (Town) Canyon TX 79366

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ________ Block No. ________ Township ________
Abstract No. ________ Survey Name ________
Distance and direction from two intersecting section or survey lines ________

☐ See attached map. map on 32-30-5 Worthless State map

3) TYPE OF WORK (Check): ☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☑ Domestic ☐ Industrial ☐ Monitor ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Injection ☐ Other

5) DRILLING METHOD (Check): ☐ Driven ☐ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☑ Air Rotary ☐ Cable Tool ☐ Other

6) WELL LOG:
Date Drilling:
Started 3-7 1986
Completed 5-9 1986

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
7 7/8	Surface	
	0	150

7) BOREHOLE COMPLETION:
☐ Open Hole ☑ Straight Wall ☐ Underreamed ☑ Gravel Packed ☐ Other
If Gravel Packed give interval . . . from ________ ft. to ________ ft.

From (ft.)	To (ft.)	Description and color of formation material
0	2	top soil
2	100	Rock
100	102	Water Break
102	150	rock

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	To	Gage Casing Screen
4 1/2	New	plastic	from top	to bottom	
		saw slot	0	150	
		preforation			

9) CEMENTING DATA [Rule 319.44(b)]
Cemented from 0 ft. to 15 ft. No. of Sacks Used 10
________ ft. to ________ ft. No. of Sacks Used ________
Method used Steel Sleeve
Cemented by Hand Mixer

10) SURFACE COMPLETION
☑ Specified Surface Slab Installed [Rule 319.44(c)]
☐ Pitless Adapter Used [Rule 319.44(d)]
☑ Approved Alternative Procedure Used [Rule 319.71] 287.44-B

11) WATER LEVEL:
Static level 20 ft. below land surface Date ________
Artesian flow ________ gpm. Date ________

12) PACKERS: Type Depth
~~Fashion~~

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Texas Water Commission

RECEIVED
OCT 22 1986
TEXAS WATER COMMISSION

RECEIVED
~~AUG 2 0 86~~
Texas Water Commission

13) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder ☐ Other ________
Depth to pump bowls, cylinder, jet, etc., ________ ft.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Fresh Depth of strata ________
Was a chemical analysis made? ☐ Yes ☐ No

14) WELL TESTS:
Type Test: ☑ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 12 gpm with ________ ft. drawdown after ________ hrs.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 12 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Whittenburg Drlg (Type or Print) Water Well Driller's License No. 2394

ADDRESS HC 63 - Box 59 (Street or RFD) Truscott (City) TX (State) 76864 (Zip)

(Signed) Jack Whittenburg (Licensed Water Well Driller) (Signed) ________ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TWC use only
Well No. 32-14-7B
Located on map ________

TWC-0392 (Rev. 06-10-85)

TEXAS WATER COMMISSION COPY

019

4 mile

Platten

Site Name Trinity Valley Iron
Well Type PLATTED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	NO	WELLS	FOUND	—	—	—
—	.5	—	NO	WELLS	FOUND	—	—	—
32-21-3A	1	230	119	NA	D	1964	NA	Tom King
32-14-7A	2	File	NOT	FOUND	—	—	—	—
〃 -7C	2	230	—	150-230	Irr	73	—	Charles Courtney
32-22-1D	2	220	—	140-220	D	82	—	Thompson
32-22-1C	2	200	100	0-200	D	79	—	Ralph Wright
32-13-9A 32-13-9AD.	3 3	220 160	95 —	190-220 120-160	D D	65 —	— —	- MAX - EYSSEN
〃 9F 9FDup.	3 3	250 255	— —	180-250 155-255	I Irr	78 78	— —	- Merry SANDER
〃 -9B	3	241	90	174-178 150-194 201-208	D	69	—	PAGE
32-14-7E	3	80	40	—	Irr	80	—	Betty JONES
〃 -7D	3	180	18	0-180	D	—	—	WAYNE FAIR
〃 -7B	3	150	20	—	D	1986	—	Mauser
32-22-1B 32-22-1BD.	3 3	422 638	342 490	— —	D I	1979 1983	— —	HYSON Schwab Co.
〃 -1A	3	File	NOT	FOUND	—	—	—	—
32-13-9H	4	196	37	88-196	D	1984	—	Homer Dear
〃 -9C	4	222	—	160-222	Irr	1974	—	Jack Bishop
〃 -9E	4	227	—	—	D	1975	—	FT. WORTH Well Service
32-14-7F	4	File	NOT	FOUND	—	—	—	—
32-22-4A	4	140	62	110-130	D	1978	—	Simpson

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

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WATER RESOURCES

32-22-4A

Send original copy by
certified mail to the
Texas Water Development Board
P. O. Box 13087
Austin, Texas 78711

State of Texas

WATER WELL REPORT

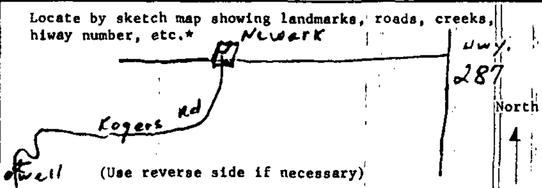
For TWDB use only
Well No. 32-22-4A
Located on map
Received: 2-7-80

1) OWNER:
Person having well drilled [redacted] (Name) Address [redacted] (Street or RFD) Ft. worth (City) Texas (State)

Landowner Same (Name) Address Same (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant, 3 miles in S. W (N.E., S.W., etc.) direction from Newark (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______
Block ______ Survey ______
Abstract No. ______
(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check):
New Well ✓ Deepening
Reconditioning Plugging

4) PROPOSED USE (Check):
Domestic ✓ Industrial Municipal
Irrigation Test Well Other

5) TYPE OF WELL (Check):
Rotary ✓ Driven Dug
Cable Jetted Bored

6) WELL LOG:
Diameter of hole 7 in. Depth drilled 140 ft. Depth of completed well 140 ft. Date drilled 10-2-78

All measurements made from 1 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	20	Sandy Soil
20	42	Lime
42	73	Sandy Shale
73	102	Sand
102	110	Shale
110	130	Sand
130	140	Lime

(Use reverse side if necessary)

9) Casing:
Type: Old New ✓ Steel Plastic ✓ Other
Cemented from 0 ft. to 45 ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4½	0	140	200 lb.

10) SCREEN:
Type
✓ Perforated saw Slotted

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
4½"	80	100	saw
	110	130	saw

7) COMPLETION (Check):
Straight wall Gravel packed ✓ Other
Under reamed Open Hole

8) WATER LEVEL:
Static level 62 ft. below land surface Date 10-2-78
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., 126 ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No ✓ If yes, by whom?
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.
Bailer test 8 gpm with 30 ft. drawdown after 2 hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes No ✓
Did any strata contain undesirable water? Yes No ✓
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Kenneth D. Millican (Type or Print) Water Well Drillers Registration No. 1563

ADDRESS 2308 Dalford (Street or RFD) Ft. Worth (City) Texas (State)

(Signed) Kenneth D. Millican (Water Well Driller) Millican Well Service (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-WD-6

022

GW 7

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711	State of Texas WATER WELL REPORT	For TWDB use only Well No. 22-13-9E Located on map Y.5 Received: 76 Form GW 8 ____ Form GW 9 ____

White Settlement Rd at

1) OWNER:
Person having well drilled FT. Worth Well Serv (Name) Address 252 N (Street or RFD) Ft. Worth (City) Texas (State)

Landowner Not Known (Name) Address 1821 Glenwick Dr. (Street or RFD) Fort Worth (City) Tx. (State)

2) LOCATION OF WELL:
County Tarrant Labor ____ League ____ Abstract No. ____

NW¼ NE¼ SW¼ SE¼ of Section ____ Block No. ____ Survey ____
(Circle as many as are known)

miles in ____ (NE, S.W., etc.) direction from FT. Worth (Town).

Glenwick Dr

Well

NORTH

1821 Glenwick

River Oaks City Hall + Fire Dept.

Sketch map of well location with distances from adjacent section or survey lines, and to landmarks, roads, and creeks.

3) TYPE OF WORK (Check):
New Well ☑ Deepening ☐
Reconditioning ☐ Plugging ☐

4) PROPOSED USE (Check):
Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

5) TYPE OF WELL (Check):
Rotary ☑ Driven ☐ Dug ☐
Cable ☐ Jetted ☐ Bored ☐

6) WELL LOG:
Diameter of hole ~~[illegible]~~ 6¼ in. Depth drilled 227 ft. Depth of completed well 227 ft. Date drilled 10-75

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material	From (ft.)	To (ft.)	Description and color of formation material
0	10	Sand fill + yellow Clay			
10	40	Blue shale			
40	57	Sand fine			
57	180	shale & lime-Blue			
180	227	Sand - Coarse			
					(Use reverse side if necessary)

7) COMPLETION (Check):
Straight wall ☐ Gravel packed ☑ Other ☐
Under reamed ☐ Open hole ☐

8) WATER LEVEL:
Static level ____ ft. below land surface Date ____
Artesian pressure ____ lbs. per square inch Date ____

9) CASING:
Type: old ☐ New ☑ Steel ☐ Plastic ☑ Other ☐
Cemented from 60 ft. to 0 ft.

10) SCREEN:
Type ____
Perforated ☐ Slotted ☐

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4½"	0	227'	160 PSI

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot size

11) WELL TESTS:
Was a pump test made? ☑ Yes ☐ No If yes by whom?
FT. Worth Well Serv. Inc.

Yield: ____ gpm with ____ ft. drawdown after ____ hrs

Bailer test ____ gpm with ____ ft. drawdown after ____ hrs

Artesian flow ____ gpm Date ____

Temperature of water ____

Was a chemical analysis made? ☐ Yes ☐ No

Did any strata contain undesirable water? ☐ Yes ☐ No

Type of water? ____ depth of strata ____

12) PUMP DATA:
Manufacturer's Name ____

Type ____ H.P. ____

Designed pumping rate ____ gpm ☐ gph ☐

Type power unit ____

Depth to bowls, cylinder, jet, etc., ____ ft. below land surface.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Richard Young (Type or Print) Water Well Drillers Registration No. #1499

Address Box 7 (Street or RFD) Rhome (City) Texas 76078 (State)

(Signed) R. C. P. Young (Water Well Driller) Young Drilling Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

Send original copy by certified mail to the Texas Water Development Board
P. O. Box 13087
Austin, Texas 78711

State of Texas

WATER WELL REPORT

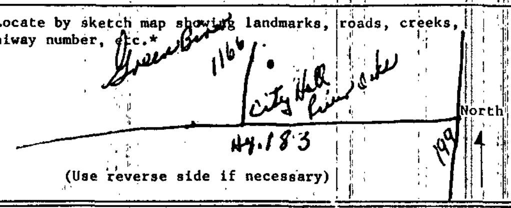
For TWDB use only
Well No. 32-1?-9E
Located on map ✓
Received 7/-
dl

1) OWNER:
Person having well drilled [redacted] Address [redacted] (Street or RFD) River Oaks (City) Texas (State)

Landowner [redacted] (Name) Address [redacted] (Street or RFD) River Oaks (City) Texas (State)

2) LOCATION OF WELL:
County Tarrant, in Town miles in ____ (N.E., S.W., etc.) direction from River Oaks (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*



(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.
Labor ____ League ____
Block ____ Survey ____
Abstract No. ____
(NW¼ NE¼ SW¼ SE¼) of Section ____

3) TYPE OF WORK (Check):
✓ ~~New~~ Well | Deepening | Reconditioning | Plugging

4) PROPOSED USE (Check):
Domestic | Industrial | Municipal | Irrigation | Test Well | Other: Yard

5) TYPE OF WELL (Check):
✓ Rotary | Driven | Dug | Cable | Jetted | Bored

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 220 ft. Depth of completed well 220 ft. Date drilled 1-9-74
All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	4	SURFACE
4	25	CLAY BROWN
25	33	SAND & GRAVEL
33	40	CLAY GRAY
40	157	LIME STONE with Streaks of BLUE SHALE
157	216	SAND with Shale Streaks
216	220	SHALE BLUE

(Use reverse side if necessary)

9) Casing:
Type: Old | ✓ ~~New~~ | Steel | ✓ ~~Plastic~~ | Other
Cemented from 0 ft. to 35 ft.
Diameter (inches) 4" Setting From (ft.) 0 To (ft.) 220 Gage #200

10) SCREEN:
Type ____
Perforated | Slotted
Diameter (inches) 4" Setting From (ft.) 160 To (ft.) 222 Slot Size 5"

7) COMPLETION (Check):
Straight wall | ✓ Gravel packed | Other
Under reamed | Open Hole

8) WATER LEVEL:
Static level ____ ft. below land surface Date ____
Artesian pressure ____ lbs. per square inch Date ____
Depth to pump bowls, cylinder, jet, etc., ____ ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: ____ gpm with ____ ft. drawdown after ____ hrs.
Bailer test 15 gpm with 40 ft. drawdown after 3 hrs.
Artesian flow ____ gpm
Temperature of water ____

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? ____ depth of strata ____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Posey Drilling Co (Type or Print) Water Well Drillers Registration No. 1331

ADDRESS 280 W Highland St (Street or RFD) Grapevine (City) Texas 76051 (State)

(Signed) Albert J Posey (Water Well Driller) Same (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-WD-8

024

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

Texas Water Well Drillers Board P. O. Box 13087 Austin, Texas 78711

1) OWNER Homer Dear (Name) Address 6525 Cahoba Dr (Street or RFD) Ft. Worth (City) Tx (State) 76135 (Zip)

2) LOCATION OF WELL: County Tarrant ______ miles in ______ (N.E., S.W., etc.) direction from ______ (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

☑ See attached map. 32-13-9H

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☒ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other

5) DRILLING METHOD (Check): ☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☒ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other

6) WELL LOG:

Date drilled 7/24/84

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
7 7/8	Surface	196

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other
If Gravel Packed give interval . . . from 196 ft. to 88 ft.

From (ft.)	To (ft.)	Description and color of formation material
0	1	Topsoil
1	5	Cliche
5	50	Shale & limestone streaks
50	81	Shale with sand streaks
81	85	Fools Gold
85	88	Brown shale
88	140	Sand
140	143	Quartz Sand
143	165	Green shale
165	168	Lignite
168	172	Brown shale
172	196	Green shale

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4 1/2	N	PVC	196'	1' above surface	

CEMENTING DATA
Cemented from 88' ft. to Surface ft.
Method used Pumped thru 1 1/2" pipe
Cemented by K. L. Dennington (Company or Individual)

9) WATER LEVEL:
Static level 37 ft. below land surface Date ______
Artesian flow ______ gpm. Date ______

10) PACKERS: Type Depth

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FEB 13 1985
DEPT. OF WATER RESOURCES

11) TYPE PUMP:
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 84 ft.

12) WELL TESTS:
☐ Type Test: ☐ Pump ☐ Bailer ☒ Jetted ☒ Estimated
Yield: 45 gpm with ______ ft. drawdown after ______ hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

COMPANY NAME Watts Drilling Co. (Type or Print) Water Well Driller's License No. 268

ADDRESS Rt. 5, Box 265 W (Street or RFD) Fort Worth, (City) Texas (State) 76126 (Zip)

(Signed) Alfred S. Watts (Licensed Water Well Driller) (Signed) K L Dennington (Registered Driller Trainee)
K. L. Dennington

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TDWR use only
Well No. 32-13-9H
Located on map 40mm

TDWR 0392 (Rev. 5-27-82)

DEPARTMENT OF WATER RESOURCES COPY

025

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	Not	Found	—	—	—
" -702	3	969	534	855-952	Plugged	1911	Tw. Mnts	Tex. Elec. Service
-701	3	969	428	867-964	Plugged	1911	"	Tex. Elec. Co.
" -807	3	1000	443	883-995	I/Plugged	1911	KCTM	TX. Elec. Service
" -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bull.
" -809	3	750	309	—	Plugged	—	—	Milner Hotel
" -802	3	+1000	480	—	O	—	Tw Mnts	Ft Worth Railroad
32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
" -212	3	420	336	—	I	1929	Kp	TX. Garment + Linen
" -213	3	1072	463	—	I	1948	Ktm	"
" -214	3	434	331	351-376 393-434	I	1953	Kp	State Uniform
" -215	3	445	315	—	I	1941	Kpa	Car Shop
" -216	3	365	341	—	I	—	Kp	Foremost Dairies
" -217	3	430	—	—	—	Plugged 1935	—	"
" -211	3	515	319	435-447 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
" -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
" -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
" -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
" -302	3	985	494	—	—	Plugged	—	—
" -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

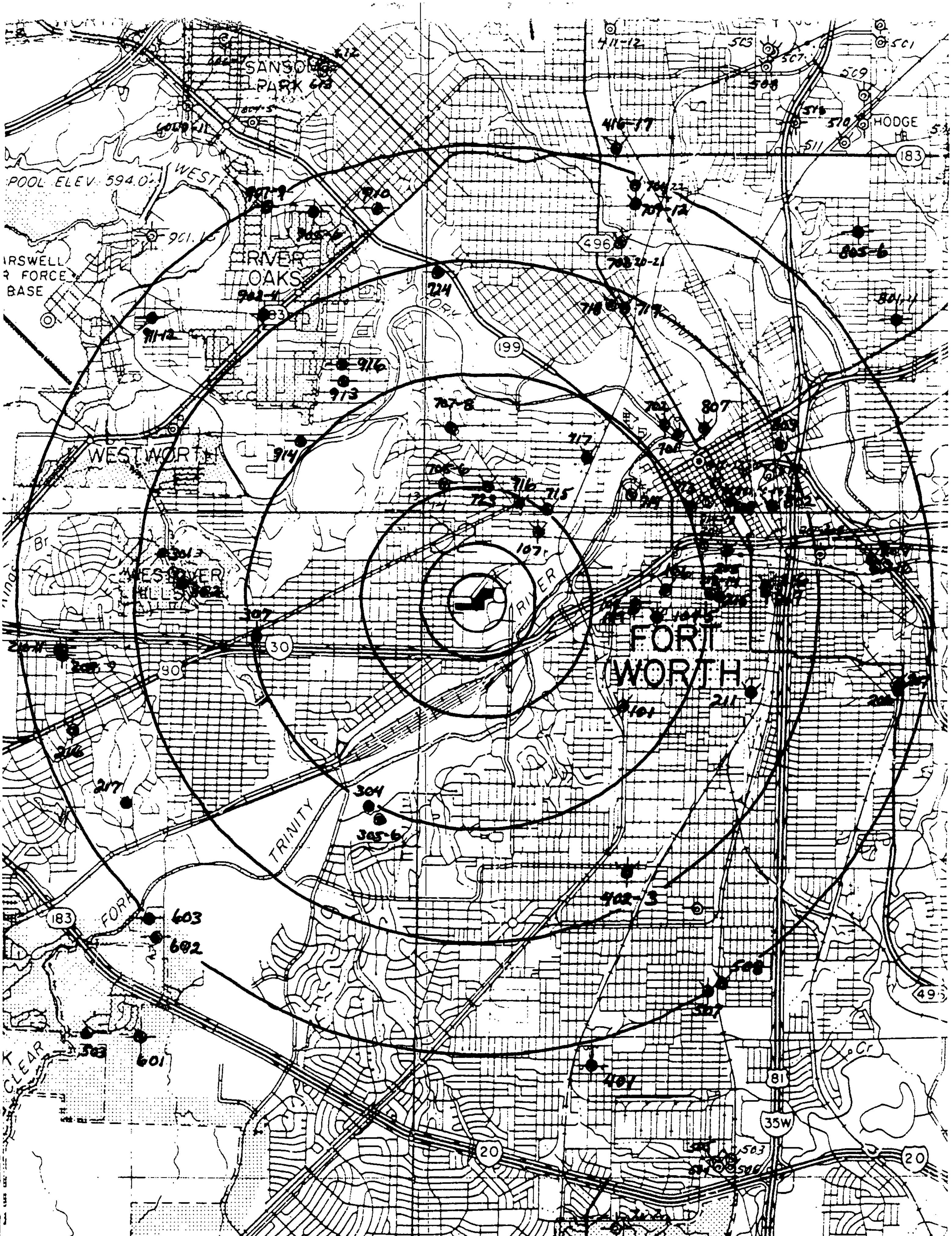
State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	Peeic
11 - 912	4	200	70	150-200	PS	1971	Kp	East Gate Mobile Hms.
11 - 902	4	834	400	768-834	—	Plugged	—	—
11 - 903	4	320	154	—	—	Plugged	—	—
11 - 904	4	256	151	—	—	Plugged	—	—
11 - 907	4	330	—	—	PS	1942	Kp	Samson Park
11 - 908	4	963	481	—	—	Plugged 1952	Twin Mnts	Samson Park
11 - 909	4	376	251	—	PS	1952	Kp	Samsom Park
11 - 905	4	985	450	—	—	Plugged 1944	—	—
11 - 906	4	340	217	—	—	Plugged 1944	—	—
11 - 910	4	334	260	304-325	D	1972	Kp	Minton
32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
11 - 709	4	980	—	—	I/O	1937	Ktm	Swift Co
11 - 710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11 - 711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
11 - 712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
11 - 703	4	39	5.2	—	I	—	Alluvin	Rosenthal Pkg. Co.
32-22-209	4	—	File	Not	Found	—	—	—
11 - 210	4	1189	680	978-1055	I	1965	Twin Mnts	Great Western Food Co.
11 - 207	4	1100	—	1000-1100	I	1972	Twin Mount.	Best Maid Products
11 - 206	4	380	298	—	—	Plugged 1954	—	Best Maid Products
11 - 507	4	506	—	—	—	Plugged 1954	—	Texas Steel Co.
32-21-603	—	File	Not	Found	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright
✓ 11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
✓ 11-208	4	250	—	—	Plugged	—	—	White Settlement
✓ 11-209	4	324	251	—	Plugged	—	—	TX. Water Co.
✓ 11-210	4	380	—	—	Plugged	—	—	TX. Water Co.
✓ 11-211	4	390	251	—	Plugged	1941	Kp	TX. Water Co.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other


SANSOM PARK
POOL ELEV. 594.0
WEST
ARSWELL
R FORCE
BASE
RIVER OAKS
WESTWORTH
WESTOVER HILLS
FORT WORTH
TRINITY
RIVER
FORK
CLEAR
HODGE
183
199
496
30
80
81
35W
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416-17
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705-6
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508
805-6
801-11
807
718
717
702
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512

GENERAL HIGHWAY MAP

TARRANT COUNTY TEXAS

PREPARED BY THE

TEXAS STATE HIGHWAY DEPARTMENT

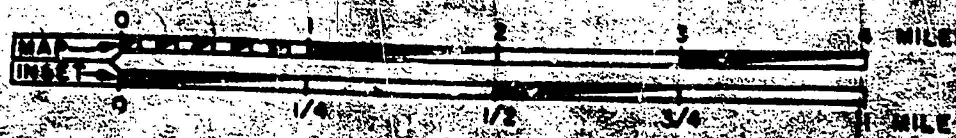
IN COOPERATION WITH THE

U.S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS

DATA OBTAINED FROM

PLANNING SURVEY DIVISION

SCALES



1958

1960 CENSUS FIGURES

POLYCONIC PROJECTION NORTH AMERICAN [illegible]

Control - U.S. Coast and Geodetic Survey and U.S. [illegible]
Engineer's Surveys, Railroad [illegible], State Highway [illegible]
Survey Division's Road Inventory [illegible]
photographs. Compiled [illegible]

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
32-14-716	1	309	210	—	I/plugged	1948	Kp	Manhattan Cleaners
〃 -715	2	261	168	—	I	1953	Kp	Kites Custom
〃 -723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
〃 -705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
〃 -706	2	306	240	—	Plugged	1943	Kp	Tx. Water Co.
〃 -707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
〃 -708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
〃 -717	2	351	220	—	I	1964	Paluxy	Clean Towel + Laundry
〃 -714	2	—	File	Not	Found	—	—	—
32-22-106	2	—	File	Not	Found	—	—	—
〃 -104	2	396	293	313-396	I	1937	—	Harris Hospital
〃 -105	2	455	—	292-413	I	1959	—	〃
〃 -108	2	—	File	Not	Found	—	—	—
〃 -109	2	—	〃	〃	〃	—	—	—
〃 -101	2	429	—	409-429	I	1975	—	Bertrand
32-21-307	2	384	270	284-323 330-360	I	1955	Paluxy	Champlin Refining
32-13-941	3	280	105	—	PS	1969	Paluxy	Tx. Mobile Home Park
〃 -913	3	241	90	174-208	PS	1969	〃	Green Acres Mobile Homes
〃 -916	3	241	96	174-208	PS	1969	Kpa	Page
32-14-724	3	210	40	—	D	1939	Paluxy	J. H. Massey
32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

.25 Mile

LOCATED

Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	NOT	Found	—	—	—
✓ 〃 -702	3	969	534	855-952	Plugged	1911	Tw. Mnts	TEX. Elec. Service
✓ - 701	3	969	428	867-964	Plugged	1911	〃	TEX. Elec. Co.
✓ 〃 -807	3	1000	443	883-995	I/Plugged	1911	KCTM	TX. Elec. Service
✓ 〃 -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bull.
✓ 〃 -809	3	750	309	—	Plugged	—	—	MILNER Hotel
✓ 〃 -802	3	+1000	480	—	O	—	Tw. Mnts	Ft. Worth Railroad.
✓ 32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
✓ 〃 -212	3	420	336	—	I	1929	Kp	TX. Garment. +Linen
✓ 〃 -213	3	1072	463	—	I	1948	Ktm	〃
✓ 〃 -214	3	434	331	351-376 393-434	I	1953	Kp	Star Uniform
✓ 〃 -215	3	445	315	—	I	1941	Kpa	Car Shop
✓ 〃 -216	3	365	341	—	I	—	Kp	Foremost Dairies
✓ 〃 -217	3	430	—	—	—	Plugged 1975	—	〃
✓ 〃 -211	3	515	319	439-441 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
✓ 32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
✓ 〃 -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
✓ 32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 〃 -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 〃 -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
✓ 〃 -302	3	985	494	—	—	Plugged	—	—
✓ 〃 -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-13-911	4	200	—	—	I	1968	Paluxy	PEETC
✓ 11-912	4	200	70	150-200	PS	1971	Kp	East Gate Mobile Hms.
✓ 11-902	4	834	400	768-834	—	plugged	—	—
✓ 11-903	4	320	154	—	—	plugged	—	—
✓ 11-904	4	256	151	—	—	plugged	—	—
✓ 11-907	4	330	—	—	PS	1942	Kp	Samson Park
✓ 11-908	4	963	481	—	—	Plugged 1952	Twin Mnts	Samson Park
✓ 11-909	4	376	251	—	PS	1952	Kp	Samson Park
✓ 11-905	4	985	450	—	—	Plugged 1944	—	—
✓ 11-906	4	340	217	—	—	Plugged 1944	—	—
✓ 11-910	4	334	260	304-325	D	1972	Kp	Minton
✓ 32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
✓ 11-709	4	980	—	—	I/O	1937	Ktm	Swift Co
✓ 11-710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
✓ 11-711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
✓ 11-712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
✓ 11-703	4	39	5.2	—	I	—	Alluvium	Rosenthal Bre. Co.
32-22-209	4	—	File	Not	Found	—	—	—
✓ 11-210	4	1189	680	978-1095	I	1965	Twin Mnts	Great Western Food Co.
✓ 11-207	4	1100	—	1000-1100	I	1972	Twin Mount.	Best Maid Products
✓ 11-206	4	380	298	—	—	Plugged 1964	—	Best Maid Products
✓ 11-507	4	506	—	—	—	Plugged 1954	—	Texas Steel Co.
32-21-603	—	File	Not	Found	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron

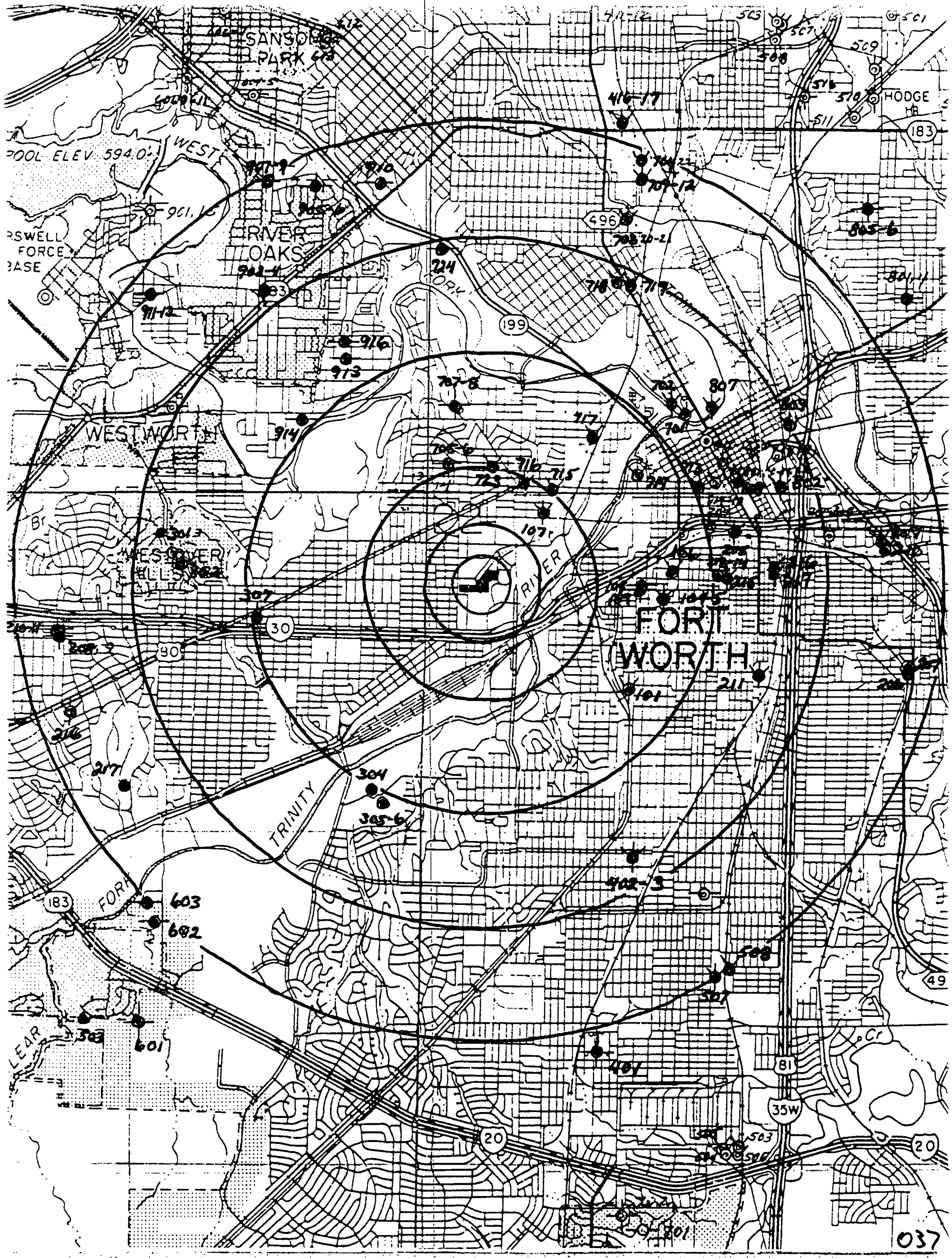
Well Type LOCATED

Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright.
11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
11-208	4	250	—	—	plugged	—	—	White Settlement
11-209	4	324	251	—	Plugged	[illegible]	—	TX. Water CO.
11-210	4	380	—	—	plugged	—	—	TX. Wtr. Co.
11-211	4	390	251	—	Plugged	1941	Kp	TX. Water CO.

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

.5 Miles


SANSOM PARK
RIVER OAKS
WESTWORTH
WESTOVER HILLS
FORT WORTH
HODGE
POOL ELEV 594.0
RSWELL FORCE BASE
TRINITY
RIVER
FORK
WEST
183
496
199
30
80
81
35W
20
49
416-17
709-12
805-6
801-11
224
718
717
911-12
902-4
916
913
707-8
807
702
914
717
705-6
716
715
723
107
307
301
302
304
305-6
216
217
211
101
402-3
603
602
508
507
503
601
404
501
502
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505
506
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508
509
510
511
612
613
901
037

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
✓ 32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
✓ 32-14-716	1	309	210	—	I/Plugged	1948	Kp	Manhattan Cleaners
✓ 〃 -715	2	261	168	—	I	1953	Kp	Kites Custom
✓ 〃 -723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
✓ 〃 -705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
✓ 〃 -706	2	306	240	—	Plugged	1943	Kp	Tx Water Co.
✓ 〃 -707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
✓ 〃 -708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
✓ 〃 -717	2	351	220	—	I	1964	Paluxy	Clean Towel + Laundry
〃 -714	2	—	File	Not	Found	—	—	—
✓ 32-22-106	2	—	File	Not	Found	—	—	—
✓ 〃 -104	2	396	293	313-396	I	1937	—	Harris Hospital
✓ 〃 -105	2	455	—	292-413	I	1959	—	〃
〃 -108	2	—	File	Not	Found	—	—	—
〃 -109	2	—	〃	〃	〃	—	—	—
✓ 〃 -101	2	429	—	409-429	I	1975	—	Bertrand
✓ 32-21-307	2	384	270	284-323 330-360	I	1955	Paluxy	Champlin Refining
✓ 32-13-941	3	280	165	—	PS	1969	Paluxy	Tx. Mobile Home Park
✓ 〃 -913	3	241	90	174-208	PS	1969	〃	Green Acres Mobile Homes
✓ 〃 -916	3	241	96	174-208	PS	1969	Kpa	Page
✓ 32-14-724	3	210	410	—	D	1939	Paluxy	J. H. Massey
✓ 32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	NOT	Found	—	—	—
✓ " -702	3	969	534	855-952	Plugged	1911	Tw. Mnts	Tex. Elec. Service
✓ - 701	3	969	428	867-964	Plugged	1911	"	Tex. Elec. Co.
✓ " -807	3	1000	443	883-995	I/Plugged	1911	KCTM	Tx. Elec. Service
✓ " -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bldg.
✓ " -809	3	750	309	—	Plugged	—	—	Milner Hotel
✓ " -802	3	+1000	480	—	O	—	Tw. Mnts	Ft. Worth Railroad.
✓ 32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
✓ " -212	3	420	336	—	I	1929	Kp	Tx. Garment. + Linen
✓ "-213	3	1072	463	—	I	1948	Ktm	"
✓ "-214	3	434	331	351-376 393-434	I	1953	Kp	State Uniform
✓ "-215	3	445	315	—	I	1941	Kpa	Car Shop
✓ "-216	3	365	341	—	I	—	Kp	Foremost Dairies
✓ "-217	3	430	—	—	—	Plugged 1975	—	"
✓ "-211	3	515	319	439-447 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
✓ 32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
✓ " -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
✓ 32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ " -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ " -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
✓ " -302	3	985	494	—	—	Plugged	—	—
✓ " -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	PEEIC
11 - 912	4	200	70	150-200	PS	1971	Kp	EAST GATE MOBILE HMS.
11 - 902	4	834	400	768-834	—	Plugged	—	—
11 - 903	4	320	154	—	—	Plugged	—	—
11 - 904	4	256	151	—	—	Plugged	—	—
11 - 907	4	330	—	—	PS	1942	Kp	Sansom Park
11 - 908	4	963	481	—	—	Plugged 1952	TWIN MNTS	Sansom Park
11 - 909	4	376	251	—	PS	1952	Kp	SANSOM PARK
11 - 905	4	985	450	—	—	Plugged 1944	—	—
11 - 906	4	340	217	—	—	Plugged 1944	—	—
11 - 910	4	334	260	304-325	D	1972	Kp	Minton
32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
11 - 709	4	980	—	—	I/O	1937	Ktm	Swift Co
11 - 710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11 - 711	4	973	812	855-973	I/O	1951	Ktm	Swift Co
11 - 712	4	981	—	847-958	I/O	1951	Ktm	Swift Co.
11 - 703	4	39	5.2	—	T	—	Alluvium	Rosenthal Ele. Co.
32-22-209	4	—	File	Not	Found	—	—	—
11 - 210	4	1189	680	978-1095	I	1965	Twin Mnts	Great Western Food Co.
11 - 207	4	1100	—	1000-1100	I	1972	TWIN MOUNT.	BEST MAID PRODUCTS
11 - 206	4	380	298	—	—	Plugged 1964	—	BEST MAID PRODUCTS
11 - 507	4	506	—	—	—	Plugged 1954	—	TEXAS STEEL CO.
32-21-603	—	File	Not	Found	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

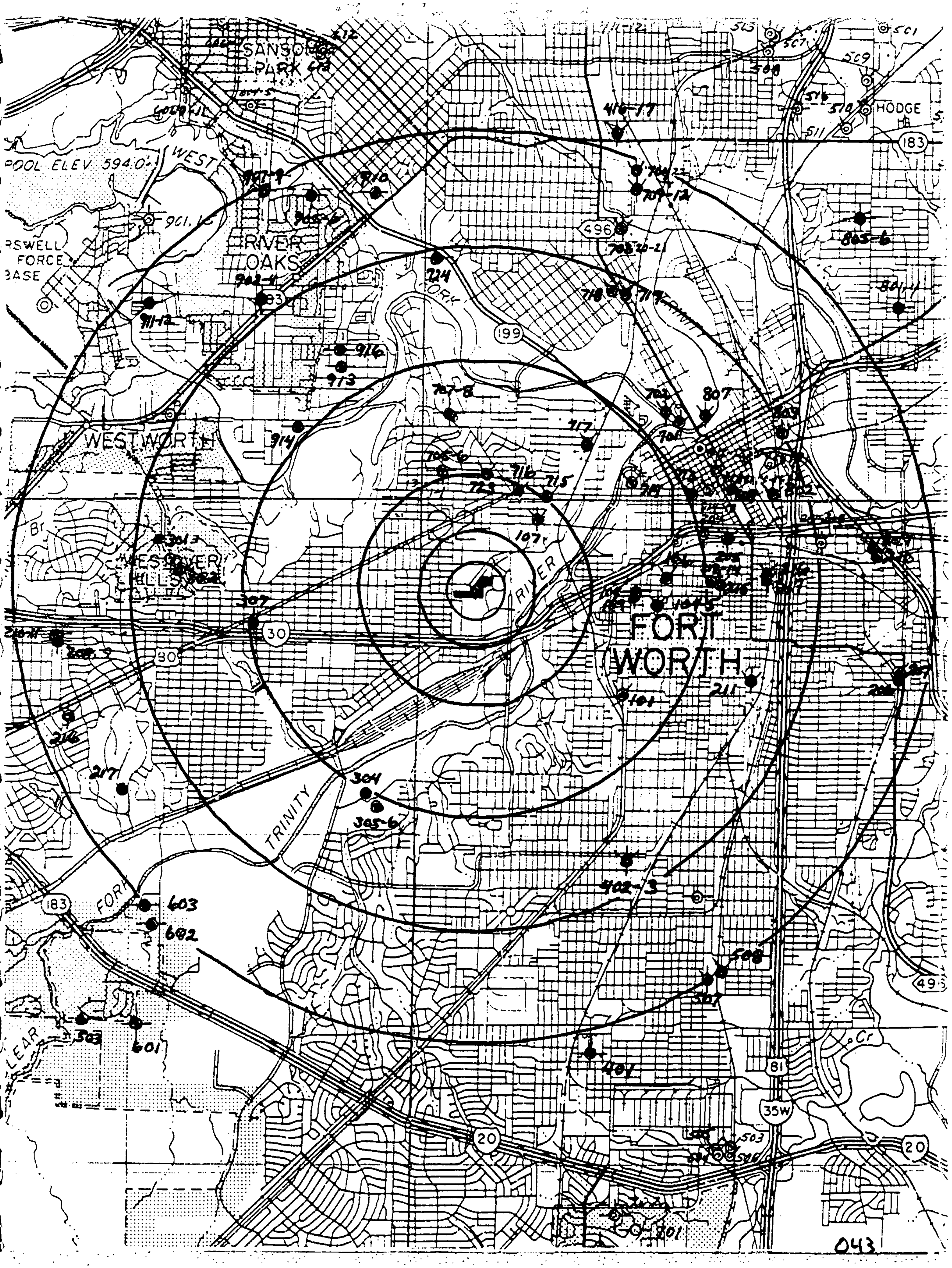
Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright.
11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
11-208	4	250	—	—	plugged	—	—	White Settlement
11-209	4	324	251	—	Plugged	—	—	TX. Water CO.
11-210	4	380	—	—	plugged	—	—	TX. Water Co.
11-211	4	390	251	—	Plugged	1941	Kp	TX. Water Co.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

1 Mile

Located


SANSOM PARK
POOL ELEV 594.0
WEST
RIVER OAKS
RSWELL FORCE BASE
HODGE
WESTWORTH
WESTOVER HILLS
FORT WORTH
TRINITY
RIVER
FORK
FORT
LEAR
183
199
496
30
80
20
35W
81
495

Site Name TRINITY Valley IRON
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
✓ 32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
✓ 32-14-716	1	309	210	—	I/plugged	1948	Kp	Manhattan Cleaners
✓ " -715	2	261	168	—	I	1953	Kp	Kites Custom
✓ " -723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
✓ " -705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
✓ " -706	2	306	240	—	Plugged	1943	Kp	Tx Water Co.
✓ " -707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
✓ " -708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
✓ " -717	2	351	220	—	I	1964	Paluxy	Clean Towel & Laundry
" -714	2	—	File	Not	Found	—	—	—
✓ 32-22-106	2	—	File	Not	Found	—	—	—
✓ " -104	2	396	293	313-396	I	1937	-	Harris Hospital
✓ " -105	2	455	—	292-413	I	1959	-	"
" -108	2	—	File	Not	Found	—	—	—
" -109	2	—	"	"	"	—	—	—
✓ " -101	2	429	—	409-429	I	1975	—	Bertrand
✓ 32-21-307	2	384	270	284-323 330-360	I	1955	Paluxy	Champlin Refinery
✓ 32-13-911	3	280	165	—	PS	1969	Paluxy	Tx. Mobile Home Park
✓ " -913	3	241	90	174-208	PS	1969	"	Green Acres Mobile Homes
✓ " -916	3	241	96	174-208	PS	1969	Kpa	Page
✓ 32-14-724	3	210	40	—	D	1939	Paluxy	J. H. Massey
✓ 32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	NOT	Found	—	—	—
✓ 11 -702	3	969	534	855-952	Plugged	1911	Tw. Mats	TEX. Elec. Service
✓ - 701	3	969	428	867-964	Plugged	1911	11	TEX. Elec. Co.
✓ 11 -807	3	1000	443	883-995	I/Plugged	1911	KCTM	TX. Elec. Service
✓ 11 -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bull.
✓ 11-809	3	750	309	—	Plugged	—	—	MILNER Hotel
✓ 11 -802	3	+1000	480	—	O	—	Tw. Mats	Ft. Worth Railroad.
✓ 32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
✓ 11 -212	3	420	336	—	I	1929	Kp	TX. Garment. Linen
✓ 11-213	3	1072	463	—	I	1948	Ktm	11
✓ 11-214	3	434	331	351-376 393-434	I	1953	Kp	State Uniform
✓ 11-215	3	445	315	—	I	1941	Kpa	Car Shop
✓ 11 -216	3	365	341	—	I	—	Kp	Foremost Dairies
✓ 11-217	3	430	—	—	—	Plugged 1975	—	11
✓ 11-211	3	515	319	435-441 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
✓ 32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
✓ 11 -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
✓ 32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 - 305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 - 306	3	360	-	—	Irr	—	Paluxy	Mid. Continent Recreation
✓ 11 - 302	3	985	494	—	—	Plugged	—	—
✓ 11 - 301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	Peeric
11 - 912	4	200	70	150-200	PS	1971	Kp	East Gate Mobile Hms.
11 - 902	4	834	400	768-834	—	Plugged	—	—
11 - 903	4	320	154	—	—	Plugged	—	—
11 - 904	4	256	151	—	—	Plugged	—	—
11 - 907	4	330	—	—	PS	1942	Kp	Sansum Park
11 - 908	4	963	481	—	—	Plugged 1952	Twin Mnts	Sansom Park
11 - 909	4	376	251	—	PS	1952	Kp	Sansom Park
11 - 905	4	985	450	—	—	Plugged 1944	—	—
11 - 906	4	340	217	—	—	Plugged 1944	—	—
11 - 910	4	334	260	304-325	D	1972	Kp	Minton
32-14-701	4	728	452	—	O	1902	Twin Mnts	Armour
11 - 709	4	980	—	—	I/O	1937	Ktm	Swift Co
11 - 710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11 - 711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
11 - 712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
11 - 703	4	39	5.2	—	I	—	Alluvin	Rosenthal Ete. Co.
32-22-209	4	—	File	Not	Found	—	—	—
11 - 210	4	1189	680	978-1095	I	1965	Twin Mnts	Great Western Food Co.
11 - 207	4	1100	—	1000-1100	I	1972	Twin Mount.	Best Maid Products
11 - 206	4	380	298	—	—	Plugged 1954	—	Best Maid Products
11 - 507	4	506	—	—	—	Plugged 1954	—	Texas Steel Co.
32-21-603	—	File	Not	Found	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

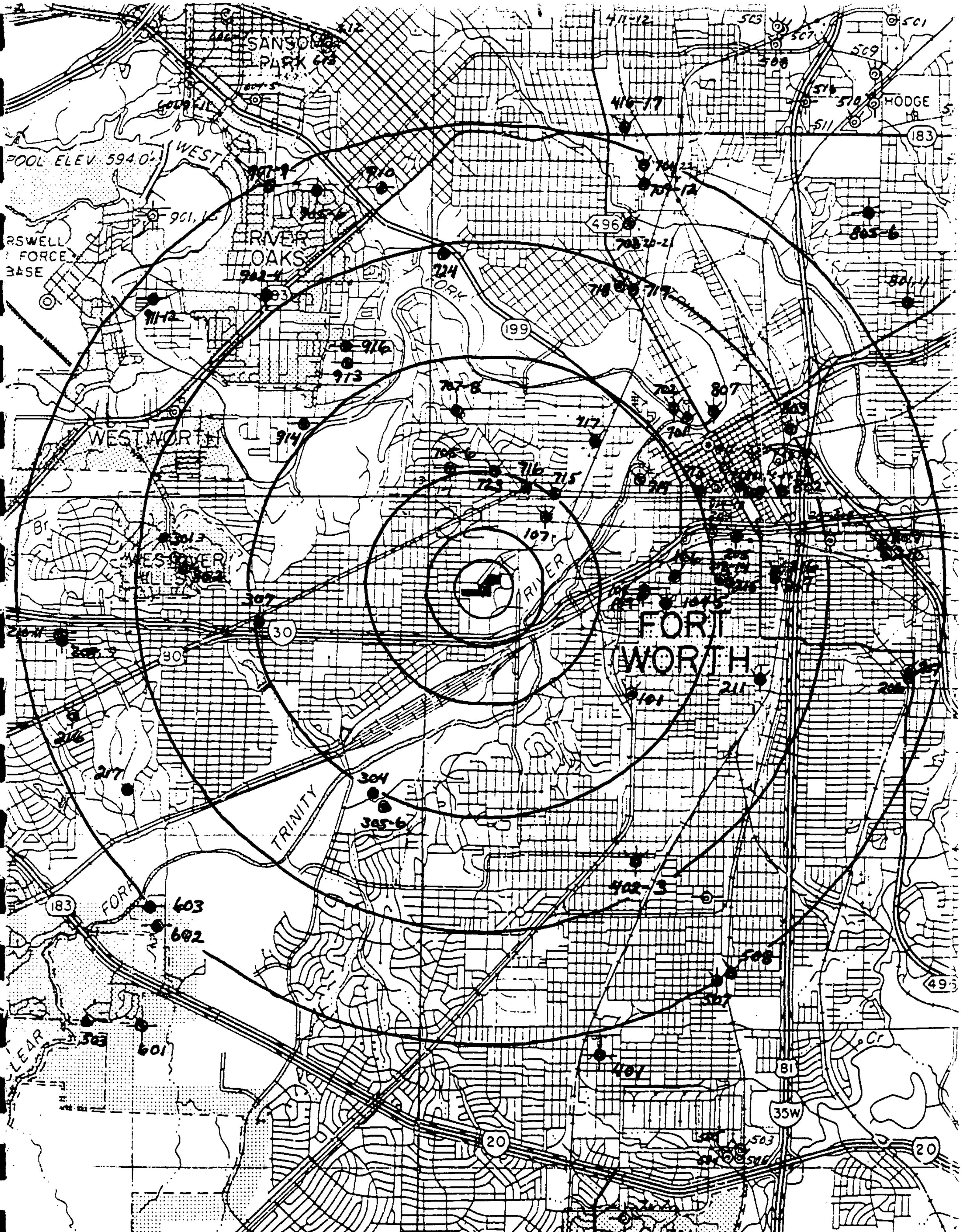
Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright
✓ 11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
✓ 11-208	4	250	—	—	Plugged	—	—	White Settlement
✓ 11-209	4	324	251	—	Plugged	[illegible]	—	TX. Water CO.
✓ 11-210	4	380	—	—	Plugged	—	—	TX. Water CO.
✓ 11-211	4	390	251	—	Plugged	1941	Kp	TX. Water CO.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

2 Mile

Located



PARK
HODGE
183
POOL ELEV 594.0
WEST
RIVER
OAKS
496
199
WESTWORTH
RIVER
FORT
WORTH
30
80
TRINITY
FORK
183
81
35W
20
495

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
32-14-716	1	309	210	—	I/Plugged	1948	Kp	Manhattan Cleaners
" -715	2	261	168	—	I	1953	Kp	Kites Custom
" -723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
" -705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
" -706	2	306	240	—	Plugged	1943	Kp	Tx Water Co.
" -707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
" -708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
" -717	2	351	220	—	I	1964	Paluxy	Clean Towel + Laundry
" -714	2	—	File	Not	Found	—	—	—
32-22-106	2	—	File	Not	Found	—	—	—
" -104	2	396	293	313-396	I	1937	—	Harris Hospital
" -105	2	455	—	292-413	I	1959	—	"
" -108	2	—	File	Not	Found	—	—	—
" -109	2	—	"	"	"	—	—	—
" -101	2	429	—	409-429	I	1975	—	Bertrand
32-21-307	2	384	270	284-333 330-360	I	1955	Paluxy	Champlin Refinery
32-13-941	3	280	165	—	PS	1969	Paluxy	Tx. Mobile Home Park
" -913	3	241	90	174-208	PS	1969	"	Green Acres Mobile Homes
" -916	3	241	96	174-208	PS	1969	Kpa	Page
32-14-724	3	210	40	—	D	1939	Paluxy	J. H. Massey
32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name: Trinity Valley Iron
Well Type: Located
Date: 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	Not	Found	—	—	—
✓ 11 -702	3	969	534	855-952	Plugged	1911	Tw. Mnts	Tex. Elec. Service
✓ -701	3	969	428	867-964	Plugged	1911	11	Tex. Elec. Co.
✓ 11 -807	3	1000	443	883-995	I/Plugged	1911	Kctm	Tx. Elec. Service
✓ 11 -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bull.
✓ 11-809	3	750	309	—	Plugged	—	—	Milner Hotel
✓ 11 -802	3	+1000	480	—	O	—	Tw. Mnts	Ft. Worth Railroad
✓ 32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
✓ 11 -212	3	420	336	—	I	1929	Kp	TX. Garment. + Linen
✓ 11-213	3	1072	463	—	I	1948	Ktm	11
✓ 11-214	3	434	331	351-376 393-434	I	1953	Kp	State Uniform
✓ 11-215	3	445	315	—	I	1941	Kpa	Car Shop
✓ 11 -216	3	365	341	—	I	—	Kp	Foremost Dairies
✓ 11-217	3	430	—	—	—	Plugged 1975	—	11
✓ 11-211	3	515	319	439-441 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
✓ 32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
✓ 11 -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
✓ 32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
✓ 11 -302	3	985	494	—	—	Plugged	—	—
✓ 11 -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	PEEIC
11-912	4	200	70	150-200	PS	1971	Kp	EAST GATE MOBILE HMS.
11-902	4	834	400	768-834	—	Plugged	—	—
11-903	4	320	154	—	—	Plugged	—	—
11-904	4	256	151	—	—	Plugged	—	—
11-907	4	330	—	—	PS	1942	Kp	Samson Park
11-908	4	963	481	—	—	Plugged 1952	Twin Mnts	Samson Park
11-909	4	376	251	—	PS	1952	Kp	SAMSON PARK
11-905	4	985	450	—	—	Plugged 1944	—	—
11-906	4	340	217	—	—	Plugged 1944	—	—
11-910	4	334	260	304-325	D	1972	Kp	Minton
32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
11-709	4	980	—	—	I/O	1937	Ktm	Swift Co
11-710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11-711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
11-712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
11-703	4	39	5.2	—	I	—	Alluvium	Rosenthal Ble. Co.
32-22-209	4	—	File	Not	Found	—	—	—
11-210	4	1189	680	978-1095	I	1965	Twin Mnts	Great Western Food Co.
11-207	4	1100	—	1000-1100	I	1972	TWIN MOUNT.	BEST MAID [illegible]
11-206	4	380	298	—	—	Plugged 1954	—	BEST MAID PRODUCTS
11-507	4	506	—	—	—	Plugged 1954	—	TEXAS STEEL CO.
32-21-603	—	File	Not	Found	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright.
✓ 11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
✓ 11-208	4	250	—	—	plugged	—	—	White Settlement
✓ 11-209	4	324	251	—	Plugged	[illegible]	—	TX. Water Co.
✓ 11-210	4	380	—	—	plugged	—	—	TX. Wtr. Co.
✓ 11-211	4	390	251	—	Plugged	1941	Kp	TX. Water Co.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-211

Owner's Well No.

State Well No. 32-22-101

County TARRANT

1. Location: ____ 1/4, ____ 1/4 Sec. ____, Block ____ Survey ____
University Cleaners
2. Owner: ~~Parkway Automatic Laundry~~ Address: 1530 W. Allen Ave
Tenant: ~~Emery Bertrand~~ Address:
Driller: Address:
3. Elevation of LS is 645 ft. above msl, determined by TOPO
4. Drilled: ____ 19 ____; Dug, Cable Tool, Rotary,
5. Depth: Rept. 550 ft. Meas. 429 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. ____ Type cyl
No. Stages ____, Bowls Diam. ____ in., Setting 386 ft.
Column Diam. ____ in., Length Tailpipe ____ ft.
8. Motor: Fuel none Make & Model ____ HP.
9. Yield: Flow ____ gpm, Pump 15 gpm, Meas. Rept., Est.
10. Performance Test: Date ____ Length of Test ____ Made by ____
Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.
Production ____ gpm Specific Capacity ____ gpm/ft.
11. Water Level: UTM ft. rept./meas. ____ 19 ____ above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. ____ 19 ____ above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. ____ 19 ____ above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. ____ 19 ____ above/below ____ which is ____ ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 7-30 1975
Source of Data Bull 5709, Neighbor @ TV shop
16. Remarks: 7,200 gpd
might use in future

CASING & BLANK PIPE

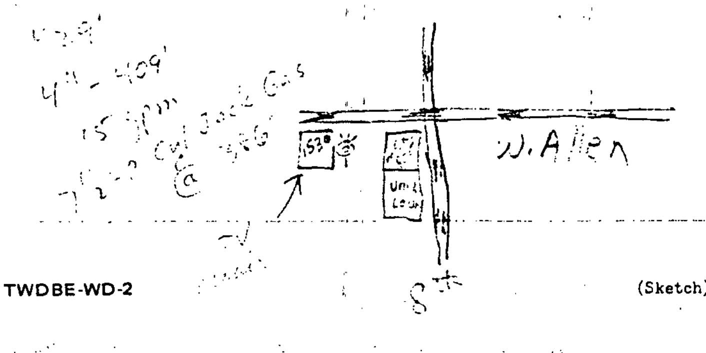
Cemented From ____ ft. to ____ ft.

Diam. (in.)	Type	Setting, ft. from	to
~~16~~			
~~10~~			
4		0	429

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
4	?	409	429



TWDBE-WD-2

(Sketch)

32-22-101

054

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp Field No. E-206 State Well No. 32-22-104

Owner's Well No. 1 County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
Laundry Well
2. Owner: HARRIS Hospital Address: 1300 W. Cannon
Tenant: ___ Address: ___
Driller: Q. D. Lewis Address: ___
3. Elevation of LS is 640 ft. above msl, determined by TOPO
4. Drilled: 9-13 1937; Dug, Cable Tool, Rotary, ___
5. Depth: Rept. 417 ft. Meas. 396 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. ___ Type Turb
No. Stages 33, Bowls Diam. 5 in., Setting 395 ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel Elec Make & Model ___ HP. 15
9. Yield: Flow ___ gpm, Pump 37.5 gpm, Meas., Rept., Est. 11-27-53
10. Performance Test: Date ___ Length of Test ___ Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
Production ___ gpm Specific Capacity ___ gpm/ft.
11. Water Level: 289 ft. rept. 7 1938 above/below ___ which is ___ ft. above/below surface.
293 ft. rept. 11-13 1953 above/below ___ which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below ___ which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below ___ which is ___ ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. 75 °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: P. L. Nordstrom Date 7-30 1975
Source of Data Bull. 5709
16. Remarks: 18000 gpd (1961)
reworked by Myers on 11-28-53

CASING & BLANK PIPE

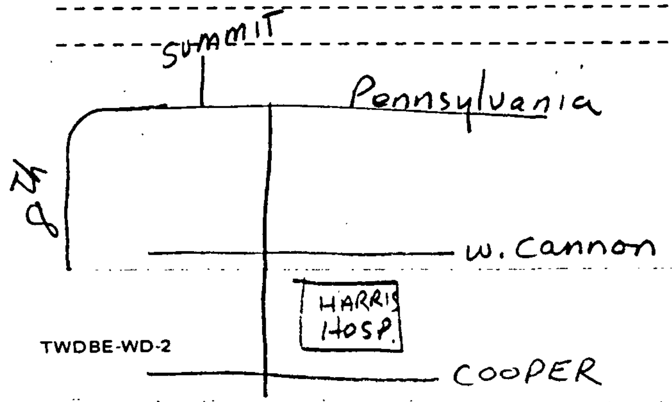
Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
10 3/4	steel	0	303
7	liner	0	396

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to
7	screen	313	396



(Sketch)

TWDBE-WD-2

32-22-104
055

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kpa

Field No.

Owner's Well No. 2

State Well No. 32 22 105

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: HARRIS HOSPITAL Address: 1300 W. Cannon

Tenant: Address:

Driller: J. L. MYERS' SONS Address:

3. Elevation of LS is 640 ft. above msl, determined by TOPO

4. Drilled: 12 1959; Dug, Cable Tool, Rotary

5. Depth: Rept. 455 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type TURB

No. Stages 30, Bowls Diam. 6 in., Setting 380 ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elec. Make & Model GE HP. 30

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date ± 1960 Length of Test Made by Driller

Static Level 298 ft. Pumping Level 357 ft. Drawdown 59 ft.

Production 185 gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 290 ft.

Diam. (in.)	Type	Setting, ft. from	to
20	Steel	0	13
13 3/8	"	0	290
8 5/8	Liner	0	455

11. Water Level: ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
8 5/8	SS WOP Screen	292	413

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 7-30 1975

Source of Data Myers Co.

16. Remarks:

E-log

see-104

(Sketch)

TWDBE-WD-2

32-22-105

054

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy   Field No. ______   State Well No. 32-21-307

Owner's Well No. ______   County TARRANT

1. Location: ____1/4, ____1/4 Sec. ______, Block ______ Survey J-5

2. Owner: Champlin Refining Co.   Address: 5301 Camp Bowie

Tenant: ______   Address: ______

Driller: LAYNE - TEXAS   Address: ______

3. Elevation of LSD is 713 ft. above msl, determined by TOPO

4. Drilled: 8-27 1955; Dug, Cable Tool, Rotary,

5. Depth: Rept. 384 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ______ Type TURB

No. Stages ____, Bowls Diam. ____ in., Setting 343 ft.

Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel ELEC   Make & Model ______ HP. 10

9. Yield: Flow ____ gpm, Pump 75 gpm, Meas. Rept. Est. ____

10. Performance Test: Date 9-7-55 Length of Test 23 hr Made by L-T

Static Level 270 ft. Pumping Level 293 ft. Drawdown 23 ft.

Production 60 gpm   Specific Capacity ______ gpm/ft.

11. Water Level: 270.0 ft. rept. 9-7- 1955 below G.L.   which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below   which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below   which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below   which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp.___ °F, Date sampled for analysis ______ Laboratory ______

Temp.___ °F, Date sampled for analysis ______ Laboratory ______

Temp.___ °F, Date sampled for analysis ______ Laboratory ______

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Gene DAVIS   Date 6-23 1977

Source of Data CHAMPLIN Records + obs.

16. Remarks:

Listed as The Chicago Corp

CASING & BLANK PIPE

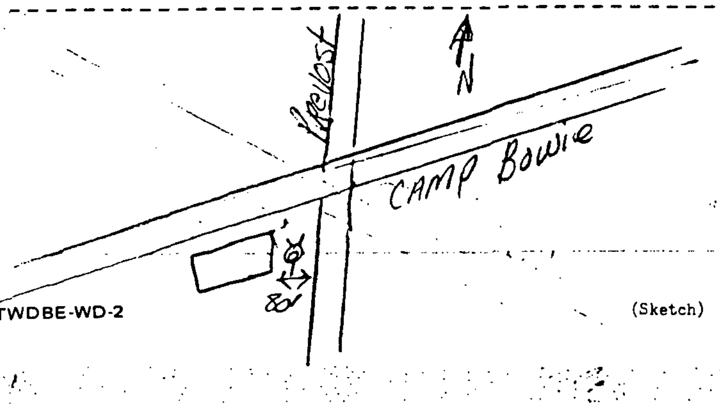
Cemented From ______ ft. to ______

Diam. (in.)	Type	Setting, ft from	to
10 3/4	Steel	0	2[illegible]
6 5/8	Liner	0	3[illegible]

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	screen	284	323
6 5/8	"	330	360



TWDBE-WD-2   (Sketch)

32-21-307

057

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer KCPA   Field No.   State Well No. 32-14-723

Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey
W. 5th St + Arch Adams

2. Owner: SANITARY WATER Co. Address: 3304 W. 5TH ST.

Tenant: Address: DOWNTOWN

Driller: Address:

3. Elevation of LSD is 560 ft. above msl, determined by TOPO

4. Drilled: 19 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 350 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Peerless Type Turb.

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel elect Make & Model HP. 7 1/2

9. Yield: Flow gpm, Pump 40 gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: UTM ft. rept. meas. 6-23 1977 above below PUMPING which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 3-3-77 Laboratory Industrial Labs.

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Gene Davis Date 6-23 1977

Source of Data

16. Remarks: 21,600 gpd in 1960

CASING & BLANK PIPE

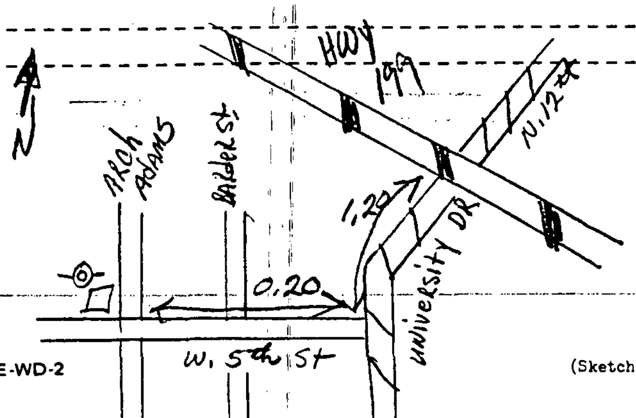
Cemented From ft. to

Diam. (in.)	Type	Setting, ft from	to
6	steel	0	350

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



TWDBE-WD-2 (Sketch)

32-14-723

058

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-98   State Well No. 32-14-718

Owner's Well No. ____   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ____, Block ______ Survey ______

2. Owner: Ft. WORTH LAUNDRY   Address: 1307-17 N. MAIN

Tenant: ____   Address: Ft. Worth

Driller: O.D. Lewis   Address: ____

3. Elevation of LS is 555 ft. above msl, determined by TOPO

4. Drilled: ______ 1926; Dug, Cable Tool, Rotary, ______

5. Depth: Rept. 375 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Pomona   Type Turb

No. Stages ____, Bowls Diam. ____ in., Setting 290 ft.

Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel Elec   Make & Model Westinghouse   HP. 20

* 9. Yield: Flow ____ gpm, Pump 187 gpm, Meas., Rept., Est. 1951

10. Performance Test: Date ____ Length of Test ____ Made by ____

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ____ gpm   Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE

Cemented From ____ ft. to ____ ft

Diam. (in.)	Type	Setting, ft. from	to
6	steel		

11. Water Level: ____ ft. rept./meas. ____ 19__ above/below ____ which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below ____ which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below ____ which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below ____ which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.) ____

Temp. — °F, Date sampled for analysis 8-6-75 Laboratory TSDH

Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

WELL SCREEN

Screen Openings ____

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test, ____

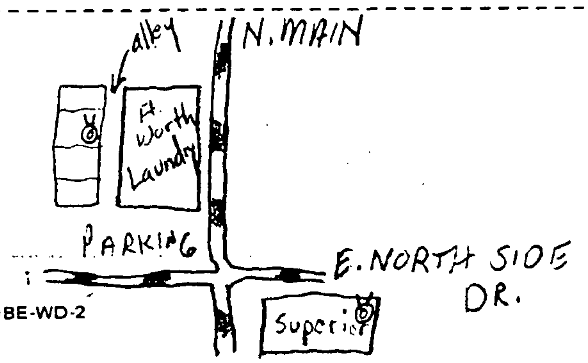
15. Record by: P.L. NORDSTROM   Date 8-6 1975

Source of Data Bull. 5709 owner

16. Remarks:

* 104 gpm in 1961   40,560 gpd

* 90 gpm in 1975



TWDBE-WD-2   (Sketch)

32-14-718

059

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy | Field No. | State Well No. 32-14-717
Owner's Well No. | County TARRANT

1. Location: ____ 1/4, ____ 1/4 Sec. ____, Block ____ Survey ____

2. Owner: CLEAN TOWEL & LINEN SERVICE Address: 2431 Weisenberger, Ft. Worth
Tenant: ____ Address: ____
Driller: Ward & Ward Drilling Co Address: ____

3. Elevation of L S is 540 ft. above msl, determined by TOPO

4. Drilled: 6-22 1964; Dug, Cable Tool, Rotary

5. Depth: Rept. 351 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ____ Type Subm
No. Stages ____, Bowls Diam. ____ in., Setting 315 ft.
Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel ELEC Make & Model ____ HP. 10

9. Yield: Flow ____ gpm, Pump 60 gpm, Meas., Rept., Est. ____

10. Performance Test: Date ____ Length of Test ____ Made by ____
Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.
Production ____ gpm Specific Capacity ____ gpm/ft.

11. Water Level: 220 ft. rept. 6-22 1964 above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. 19__ above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. 19__ above/below ____ which is ____ ft. above/below surface.
____ ft. rept./meas. 19__ above/below ____ which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. -- °F, Date sampled for analysis 8-6-75 Laboratory TSDH
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: R.L. NORDSTROM Date 8-6 1975
Source of Data obs, mngr.

16. Remarks:

CASING & BLANK PIPE

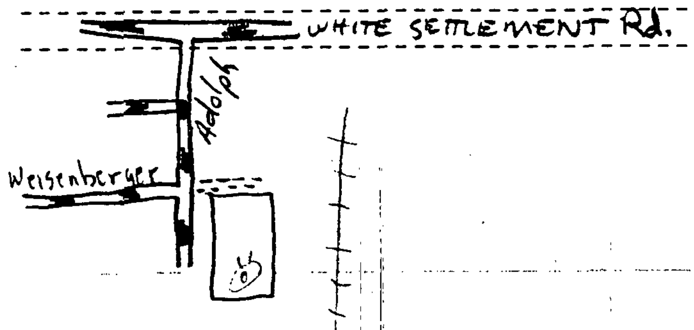
Cemented From 0 ft. to 351 ft.

Diam. (in.)	Type	Setting, ft. from	to
8 5/8	steel	0	351

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
8 5/8	GUN PERF		



(Sketch)

TWDBE-WD-2

32-14-717 060

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-143   State Well No. 32-14-716
Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey

2. Owner: MANHATTAN CLEANERS & LAUNDRY Address: W. 7th
Tenant: Address:
Driller: T.J. MILLICAN Address:

3. Elevation of LS is 545 ft. above msl, determined by TOPO

4. Drilled: 19 48; Dug, Cable Tool, Rotary,

5. Depth: Rept. 309 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T
No. Stages, Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft. none

8. Motor: Fuel E Make & Model HP.

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, ft. from	to
5	steel	0	309

11. Water Level: 210 ft. rept. meas. 19 48 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used, gone

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,

15. Record by: PRY Date 8-6 1975
Source of Data Bull. 5709

16. Remarks:

061

TWDBE-WD-2

(Sketch)

32-14-716

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-144

Owner's Well No.

State Well No. 32-14-715

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: ~~J.G. GAVREL~~ QUALITY CLEANERS Address: 2737 W 7th

Tenant: Kites Custom Address:

Driller: D.C. McKee Address:

3. Elevation of LS is 545 ft. above msl, determined by TOPO

4. Drilled: 1953; Dug, Cable Tool, Rotary,

5. Depth: Rept. 261 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel E Make & Model HP.

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: 168.6 ft. rept. meas. 2-7 1954 above below lsd which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 10-9-50 Laboratory USGS

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: R.L. NORDSTROM Date 8-6 1975

Source of Data Bull. 5709

16. Remarks:

J.G. GAVREL on Woodstock leases

CASING & BLANK PIPE

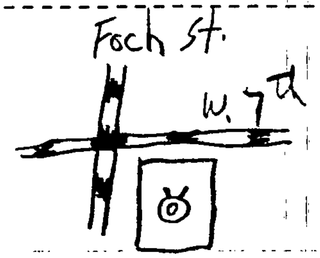
Cemented From ft. to

Diam. (in.)	Type	Setting, ft. from	to
6	steel	0	2

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



TWDBE-WD-2

(Sketch)

32-14-715

062

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-142   State Well No. 32-14-708

Owner's Well No. ____   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___

2. Owner: TEXAS WATER CO. Address: ___

Tenant: ___ Address: ___

Driller: T. J. MILLICAN Address: ___

3. Elevation of LSD is 580 ft. above msl, determined by ___

4. Drilled: JULY 19 41; Dug, Cable Tool, Rotary, ___

5. Depth: Rept. 254 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ___

7. Pump: Mfgr. ___ Type T

No. Stages ___, Bowls Diam. ___ in., Setting ___ ft.

Column Diam. ___ in., Length Tailpipe ___ ft.

none

8. Motor: Fuel E Make & Model ___ HP. 7 1/2

9. Yield: Flow ___ gpm, Pump 42 gpm, Meas., Rept., Est. 10-26-48

10. Performance Test: Date ___ Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production ___ gpm Specific Capacity ___ gpm/ft.

11. Water Level: 173 ft. rept. meas. 7 19 41 above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, plugged

13. Quality: (Remarks on taste, odor, color, etc.) ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 5-5 1975

Source of Data Bull. 5709

16. Remarks: ___

CASING & BLANK PIPE

Cemented From ___ ft. to ___

Diam. (in.)	Type	Setting, ft. from	to
8			
7			

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to

see -707

(Sketch)

063

TWDBE-WD-2

32-14-708

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-141   State Well No. 32-14-707
Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: TEXAS WATER Co. Address:
Tenant: Address:
Driller: T. J. MILLICAN Address:

3. Elevation of LSD is 580 ft. above msl, determined by

4. Drilled: 1943; Dug, Cable Tool, Rotary,

5. Depth: Rept. 750 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T
No. Stages , Bowls Diam. in., Setting 550 ft.
Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel E Make & Model HP. 50

9. Yield: Flow gpm, Pump 166 gpm, Meas., Rept., Est. 10-48

10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

11. Water Level: 260 ft. rept. meas. 9 1943 above below which is ft. above below surface.
320 ft. rept. meas. 9 1945 above below which is ft. above below surface.
364 ft. rept. meas. 12 1949 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 5-5 1975
Source of Data Bull. 5709

16. Remarks:

CASING & BLANK PIPE

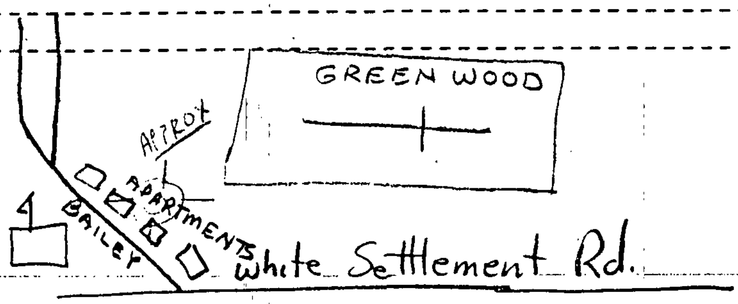
Cemented From ft. to

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



TWDBE-WD-2 (Sketch)

064

32-14-70

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-140

Owner's Well No.

State Well No. 32-14-706

County TARRANT

1. Location: ____1/4, ____1/4 Sec. ______, Block ________ Survey ________

2. Owner: Texas Water Co. Address:

Tenant: Address:

Driller: T.J. MILLICAN Address:

3. Elevation of LSD is 635 ft. above msl, determined by TOPO

4. Drilled: SEPT. 1943; Dug, Cable Tool, Rotary,

5. Depth: Rept. 306 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ________ Type T

No. Stages ____, Bowls Diam. ____ in., Setting 280 ft.

Column Diam. ____ in., Length Tailpipe ____ ft.

none

8. Motor: Fuel E Make & Model ________ HP. 10

9. Yield: Flow ____ gpm, Pump 69 gpm, Meas. Rept., Est. 1-28-55

10. Performance Test: Date ____ Length of Test ____ Made by ____

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ____ gpm Specific Capacity ____ gpm/ft.

11. Water Level: 240 ft. rept. 9 1943 above below ____ which is ____ ft. above below surface.

240.6 ft. meas. 9-21 1954 below lsd which is ____ ft. above below surface.

____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. 76 °F, Date sampled for analysis ____ Laboratory ____

Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 5-5 1975

Source of Data Bull. 5709

16. Remarks:

CASING & BLANK PIPE

Cemented From ____ ft. to ____ ft

Diam. (in.)	Type	Setting, ft. from	to
8			
6			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

see -705

(Sketch)

TWDBE-WD-2

005

32-14-706

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm

Field No. E-139

Owner's Well No.

State Well No. 32-14-705

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block , Survey
2. Owner: Texas Water Co. Address:
   Tenant: Address:
   Driller: LAYNE-TEXAS CO. Address:
3. Elevation of LSD is 635 ft. above msl, determined by TOPO
4. Drilled: 998 19 43; Dug, Cable Tool, Rotary,
* 5. Depth: Rept. 1880 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
   No. Stages 14, Bowls Diam. 6 in., Setting 650 ft.
   Column Diam. in., Length Tailpipe ft. none
8. Motor: Fuel E Make & Model HP. 50
9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
    Static Level ft. Pumping Level ft. Drawdown ft.
    Production gpm Specific Capacity gpm/ft.
11. Water Level: 444 ft. rept. 6 1949 above/below which is ft. above/below surface.
    486 ft. rept. 3 1953 above/below which is ft. above/below surface.
    ft. rept./meas. 19 above/below which is ft. above/below surface.
    ft. rept./meas. 19 above/below which is ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, plugged
13. Quality: (Remarks on taste, odor, color, etc.)
    Temp. — °F, Date sampled for analysis 4-28-53 Laboratory USGS
    Temp. — °F, Date sampled for analysis 7-50 Laboratory TSDH
    Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
    Formation Samples, Pumping Test,
15. Record by: P. Nordstrom Date 5-5 1975
    Source of Data Bull. 5709
16. Remarks:

* Deepened from 755' in ~~1949~~ 4-19-47

completely gone now

CASING & BLANK PIPE

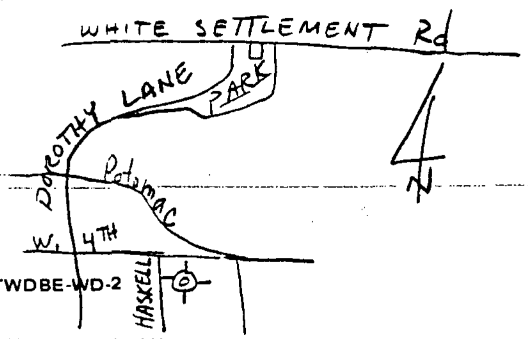
Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10	Steel		
8	"		
6	Liner		

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



TWDBE-WD-2

(Sketch)

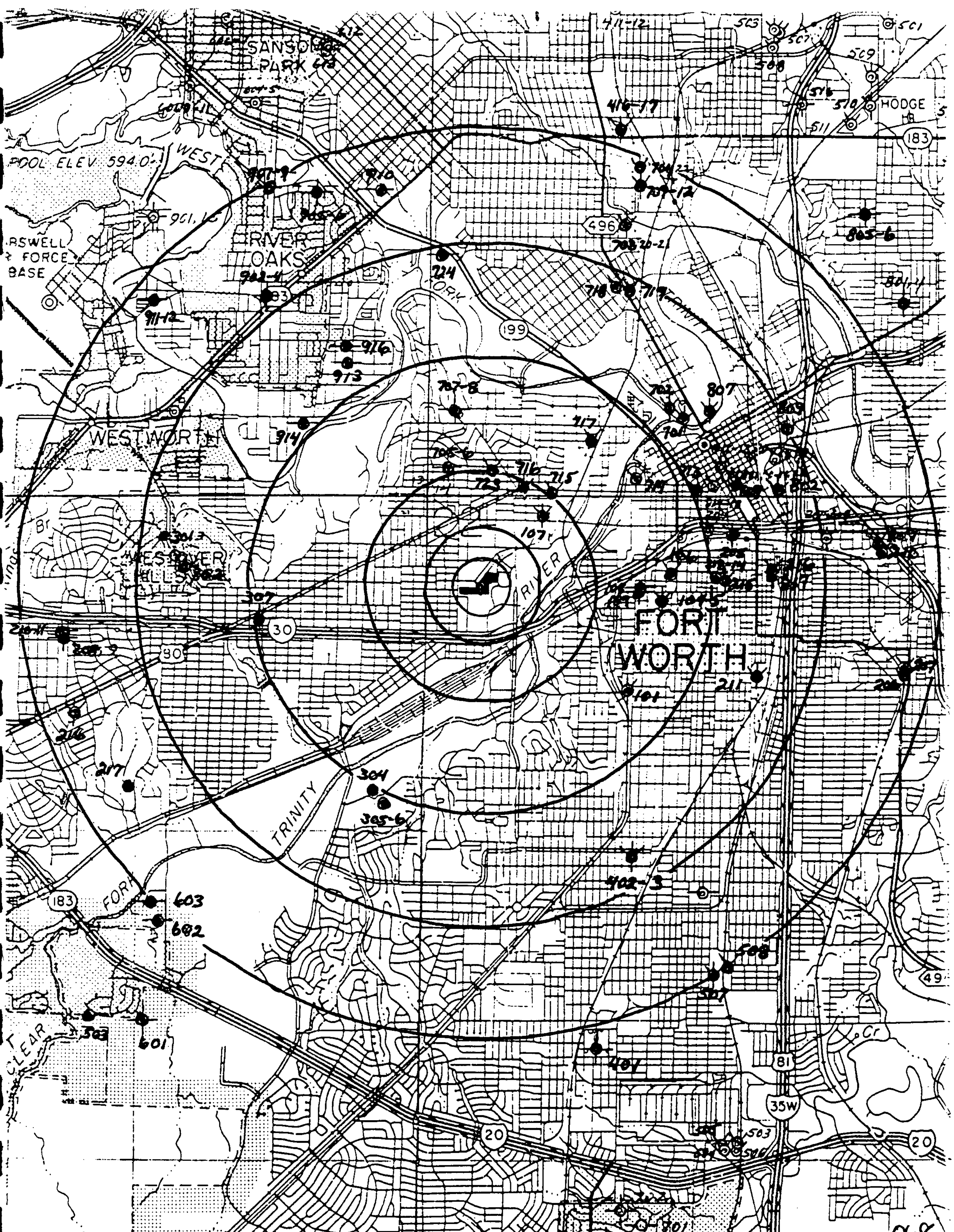
E-log

066

32-14-705

3 Mile

Location



SANSOM PARK
HODGE
POOL ELEV 594.0
WEST
RIVER OAKS
AIR FORCE BASE
WESTWORTH
WESTOVER HILLS
FORT WORTH
TRINITY
RIVER
FORK
CLEAR
183
199
496
30
80
81
35W
20
49

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
32-14-716	1	309	210	—	I/Plugged	1948	Kp	Manhattan Cleaners
11-715	2	261	168	—	I	1953	Kp	Kites Custom
11-723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
11-705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
11-706	2	306	240	—	Plugged	1943	Kp	Tx Water Co.
11-707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
11-708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
11-717	2	351	220	—	I	1964	Paluxy	Clean Towel + Laundry
11-714	2	—	File	Not	Found	—	—	—
32-22-106	2	—	File	Not	Found	—	—	—
11-104	2	396	293	313-396	I	1937	-	Harris Hospital
11-105	2	455	—	292-413	I	1959	-	11
11-108	2	—	File	Not	Found	—	—	—
11-109	2	—	11	11	11	—	—	—
11-101	2	429	—	409-429	I	1975	—	Bertrand
32-21-307	2	384	270	284-323 330-360	I	1955	Paluxy	Champlin Refining
32-13-941	3	280	165	—	PS	1969	Paluxy	Tx. Mobile Home Park
11-913	3	241	90	174-208	PS	1969	11	Green Acres Mobile Homes
11-916	3	241	96	174-208	PS	1969	Kpa	Page
32-14-724	3	210	410	—	D	1939	Paluxy	J. H. Massey
32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	Not	Found	—	—	—
" -702	3	969	534	855-952	Plugged	1911	Tw. Mts	Tex. Elec. Service
-701	3	969	428	867-964	Plugged	1911	"	Tex. Elec. Co.
" -807	3	1000	443	883-995	I/Plugged	1911	KCTM	Tx. Elec. Service
" -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bld.
" -809	3	750	309	—	Plugged	—	—	Milner Hotel
" -802	3	+1000	480	—	O	—	Tw. Mts	Ft. Worth Railroad
32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
" -212	3	420	336	—	I	1929	Kp	TX. Garment + Linen
" -213	3	1072	463	—	I	1948	Ktm	"
" -214	3	434	331	351-376 393-434	I	1953	Kp	Star Uniform
" -215	3	445	315	—	I	1941	Kpa	Car Shop
" -216	3	365	341	—	I	—	Kp	Foremost Dairies
" -217	3	430	—	—	—	Plugged 1975	—	"
" -211	3	515	319	439-447 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
" -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
" -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
" -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
" -302	3	985	494	—	—	Plugged	—	—
" -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	PEEIC
11 - 912	4	200	70	150-200	PS	1971	Kp	EAST GATE MOBILE HMS.
11 - 902	4	834	400	768-834	—	plugged	—	—
11 - 903	4	320	154	—	—	plugged	—	—
11 - 904	4	256	151	—	—	plugged	—	—
11 - 907	4	330	—	—	PS	1942	Kp	Sansom Park
11 - 908	4	963	481	—	—	Plugged 1952	Twin Mnts	Sansom Park
11 - 909	4	376	251	—	PS	1952	Kp	SANSOM PARK
11 - 905	4	985	450	—	—	Plugged 1944	—	—
11 - 906	4	340	217	—	—	Plugged 1944	—	—
11 - 910	4	334	260	304-325	D	1972	Kp	Minton
32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
11 - 709	4	980	—	—	I/O	1937	Ktm	Swift Co
11 - 710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11 - 711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
11 - 712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
11 - 703	4	39	5.2	—	I	—	Alluvium	Rosenthal Ice. Co.
32-22-209	4	—	File	Not	Found	—	—	—
11 - 210	4	1189	680	978-1095	I	1965	Twin Mnts	Great Western Food Co.
11 - 207	4	1100	—	1000-1100	I	1972	TWIN MOUNT.	BEST MAID Products
11 - 206	4	380	298	—	—	Plugged 1954	—	BEST MAID PRODUCTS
11 - 507	4	506	—	—	—	Plugged 1954	—	TEXAS STEEL CO.
32-21-603	—	File	Not	FOUND	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M - Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name TRINITY Valley IRON
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright.
✓ 11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
✓ 11-208	4	250	—	—	plugged	—	—	White Settlement
✓ 11-209	4	324	251	—	Plugged	—	—	TV. Water CO.
✓ 11-210	4	380	—	—	plugged	—	—	TX. Wtr. Co.
✓ 11-211	4	390	251	—	Plugged	1941	Kp	TX. Water CO.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains   Field No. 27   State Well No. 32-22-205
Owner's Well No. E-158   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
In Basement
2. Owner: U. S. POST OFFICE   Address: ___
Tenant: ___   Address: ___
Driller: Q. D. LEWIS   Address: ___
3. Elevation of LSD is 611 ft. above msl, determined by ___
4. Drilled: MAY 1932; Dug, Cable Tool, Rotary, ___
5. Depth: Rept. 1095 ft. Meas. ___ ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ___
7. Pump: Mfgr. Pomona   Type Turb
No. Stages ___, Bowls Diam. ___ in., Setting 680 ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel ELEC   Make & Model ___ HP. ___
9. Yield: Flow ___ gpm, Pump 145 gpm, Meas. Rept. Est. 12-49
10. Performance Test: Date 5-19-32 Length of Test 29 hrs Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown 197 ft.
Production 246 gpm   Specific Capacity ___ gpm/ft.
11. Water Level: 240 ft. rept. 1932 below which is ___ ft. above/below surface.
260 ft. rept. 1934 below which is ___ ft. above/below surface.
548.4 ft. meas. 2-2 1955 below which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below which is ___ ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, ___
13. Quality: (Remarks on taste, odor, color, etc.) ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test, ___
15. Record by: P. NORDSTROM   Date 7-21 1975
Source of Data Bulletin 5709
16. Remarks: ___

CASING & BLANK PIPE

Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
12			
8			

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to

Obs Well

TWDBE-WD-2   (Sketch)

32-22-205
073

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-203   State Well No. 32-22-212

Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block   Survey

TEX. Garment & Linen Service

2. Owner: ~~NATATORIUM~~ LAUNDRY   Address: 428 Hemphill

Tenant: Address:

Driller: T. J. MILLICAN   Address:

3. Elevation of LS is 627 ft. above msl, determined by TOPO

4. Drilled: 1929; Dug, Cable Tool, Rotary,

5. Depth: Rept. 420 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Pomona   Type TURB

No. Stages, Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel ELEC   Make & Model   HP. 30

9. Yield: Flow gpm, Pump 105 gpm, Meas., Rept., Est. 12-23-53

10. Performance Test: Date   Length of Test   Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm   Specific Capacity gpm/ft.

11. Water Level: 160 ft. rept. meas. 1938 above below   which is ft. above below surface.

336.1 ft. rept. meas. 12-20 1953 above below lsd   which is ft. above below surface.

ft. rept. meas. 19 above below   which is ft. above below surface.

ft. rept. meas. 19 above below   which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, STAND-BY

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis   Laboratory

Temp. °F, Date sampled for analysis   Laboratory

Temp. °F, Date sampled for analysis   Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: RLW   Date 7-30 1975

Source of Data Bull. 5709,

16. Remarks:

CASING & BLANK PIPE

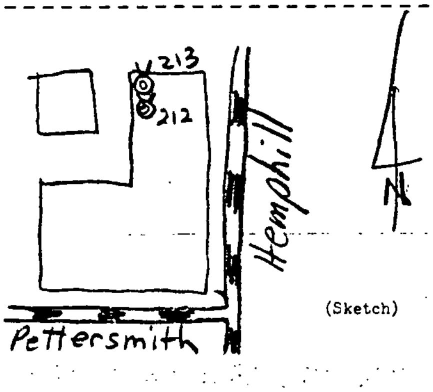
Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

074

32-22-212

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-202   State Well No. 32-22-213

Owner's Well No. ______   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
Texas Garment & Linen Service
2. Owner: ~~NATATORIUM LAUNDRY~~ Address: 428 Hemphill
Tenant: ______ Address: P.O. Box 2687
Driller: H. MILLICAN Address: 76101
3. Elevation of LS is 627 ft. above msl, determined by TOPO
4. Drilled: MARCH 1948; Dug, Cable Tool, Rotary, ______
5. Depth: Rept. 1072 ft. Meas. ______ ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ______
7. Pump: Mfgr. F-M Type ~~TURB~~ SUB
No. Stages ___, Bowls Diam. ___ in., Setting 890 ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel ELEC Make & Model ______ HP. 75
9. Yield: Flow ___ gpm, Pump 150 gpm, Meas., Rept., Est. 9-54
10. Performance Test: Date ___ Length of Test ___ Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
Production ___ gpm Specific Capacity ___ gpm/ft.
11. Water Level: 463 ft. rept. meas. MAR 1948 above below ______ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, ______
13. Quality: (Remarks on taste, odor, color, etc.) ______
Temp. 72 °F, Date sampled for analysis 7-22-75 Laboratory [illegible]
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test, ______
15. Record by: P. Nordstrom Date 7-22 1975
Source of Data Bull. 5709 chs. M.W. Hayes
16. Remarks: Wallace Hayes

CASING & BLANK PIPE

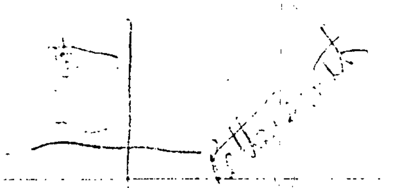
Cemented From ______ ft. to ______ ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to



~~622~~-212

(Sketch)

TWDBE-WD-2

075

32-22-213

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-200   State Well No. 32 22 214

Owner's Well No. ______   County TARRANT

1. Location: ___1/4, ___1/4 Sec. ___, Block ___ Survey ___

STAR UNIFORM RENTAL CO

2. Owner: ~~Corrons Laundry~~   Address: 400 S. JENNINGS

Tenant: ______   Address: ______

Driller: H. MILLICAN   Address: ______

3. Elevation of LS is 640 ft. above msl, determined by TDPO

4. Drilled: 7 Dec. 1953; Dug, Cable Tool, Rotary, ______

5. Depth: Rept. 434 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ______

7. Pump: Mfgr. ______ Type Turb

No. Stages ___, Bowls Diam. ___ in., Setting 415 ft.

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel Elec Make & Model ______ HP. 20

9. Yield: Flow ___ gpm, Pump 75 gpm, Meas., Rept., Est.

10. Performance Test: Date 12-7-53 Length of Test 1 day Made by driller

Static Level 331 ft. Pumping Level 415 ft. Drawdown 84 ft.

Production 112 gpm Specific Capacity 1.33 gpm/ft.

CASING & BLANK PIPE

Cemented From ______ ft. to ______ ft.

Diam. (in.)	Type	Setting, ft. from	to
10	steel	0	350
8	liner	340	434

11. Water Level: 331 ft. rept. meas. 12 1953 above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ______ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.) ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

WELL SCREEN

Screen Openings ______

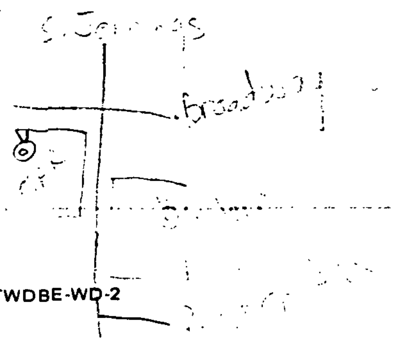
Diam. (in.)	Type	Setting, ft. from	to
8	screen	351	376
8	"	393	434

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. L. Nordstrom   Date 7-30 1955

Source of Data Bull. 5709 [illegible]

16. Remarks: 40,500 gpd (1961)



TWDBE-WD-2   (Sketch)

076

32-22-214

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kpa   Field No. E-199   State Well No. 32-22-215
Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block , Survey
~~Modern Laundry~~ Car repair shop
2. Owner: ~~Pressley Cleaners~~ Address: 1419 S. JENNINGS
Tenant: Address:
Driller: E. H. RICHARDSON Address:
3. Elevation of LS is 445 ft. above msl, determined by TOPO
4. Drilled: 1941; Dug, Cable Tool, Rotary,
5. Depth: Rept. 445 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Pomona Type Turb
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel Elec Make & Model HP. 10
9. Yield: Flow gpm, Pump 45 gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.
11. Water Level: 315 ft. rept. meas. 1941 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used,
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 7-30 1975
Source of Data Bull. 5709
16. Remarks: 21,600 gpd (1961)
Pump in working order but car repair shops doesn't need

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
8	steel		
3 1/2	Liner	0	410

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

see -214
(Sketch)

TWDBE-WD-2

077

32-22-215

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-197   State Well No. 32-22-216

Owner's Well No. ______   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
In Power Plant
2. Owner: Foremost Dairies   Address: Box 1318
Tenant: ______   Address: 315 S. Calhoun
Driller: ______   Address: ______
3. Elevation of LS is 630 ft. above msl, determined by TOPO
4. Drilled: ______ 19__; Dug, Cable Tool, Rotary, ______
5. Depth: Rept. 365 ft. Meas. 364 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ______
7. Pump: Mfgr. Peerless   Type Turb
No. Stages ___, Bowls Diam. ___ in., Setting 362 ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel ELEC   Make & Model ______   HP. 15
9. Yield: Flow ___ gpm, Pump 20 gpm, Meas., Rept., Est. 1968
10. Performance Test: Date ___ Length of Test ___ Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
Production ___ gpm Specific Capacity ___ gpm/ft.

CASING & BLANK PIPE

Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
8	Steel		

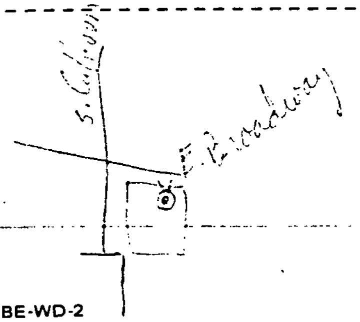
11. Water Level: 304 ft. rept. 10 1954 above/below ______ which is ___ ft. above/below surface.
341 ft. rept. 3-28 1958 above/below (Myers) ______ which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below ______ which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below ______ which is ___ ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used, BOILER USE
13. Quality: (Remarks on taste, odor, color, etc.) ______
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: R. Nordstrom   Date 7-30 1975
Source of Data Bull. 5709, Maint. Foreman, etc.
16. Remarks:
Serviced by Myers
1,800,000 gal in 9 mos 1968



TWDBE-WD-2

(Sketch)

078

32-22-216

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kpa

Field No.

Owner's Well No.

State Well No. 32-22-217

County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey

2. Owner: Foremost Dairies Address: 315 S. Calhoun

Tenant: Address:

Driller: Address:

3. Elevation of LS is 630 ft. above msl, determined by TOPO

4. Drilled: 19 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 430 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type Turb

No. Stages , Bowls Diam. in., Setting 364 ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elec Make & Model HP. 7 1/2

9. Yield: Flow gpm, Pump 55 gpm, Meas., Rept., Est. 1961

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
3	steel	0	400

11. Water Level: ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, plugged

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: R. L. Nordstrom Date 7-30 1975

Source of Data obs, Maint. Supt.

16. Remarks: 72,000 gpd (1961)

see 216

(Sketch)

TWDBE-WD-2

320

32-22-21

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy Field No. State Well No. 32-22-403

Owner's Well No. 2 County Tarrant

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: Backus Laundry Address: 1551 W. Berry

Tenant: Address:

Driller: Address:

3. Elevation of LS is 690 ft. above msl, determined by TOPO

4. Drilled: 19 54; Dug, Cable Tool, Rotary,

5. Depth: Rept. 410 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type Turb

No. Stages , Bowls Diam. in., Setting 325 ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elec Make & Model HP. 20

9. Yield: Flow gpm, Pump 55 gpm, Meas. Rept, Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, from	to
6	steel	0	390

11. Water Level: ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P.L. NORDSTROM Date 7-30 1975

Source of Data obs.

16. Remarks: 19,800 GPD

Business now up for sale

see 402

(Sketch)

TWDBE-WD-2

080

32-22-403

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-237   State Well No. 32-22-402

Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block   Survey

2. Owner: BACK-US LAUNDRY   Address: 1551 W. Berry

Tenant: Address:

Driller: Address:

3. Elevation of LS is 690 ft. above msl, determined by TOPO

4. Drilled: 19 , Dug, Cable Tool, Rotary,

5. Depth: Rept. 449 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr.   Type T

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.   none

8. Motor: Fuel E   Make & Model   HP. 25

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date   Length of Test   Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: 338.2 ft. rept. meas. 9-30 1950 above below lsd   which is ft. above below surface.

ft. rept. meas. 19 above below   which is ft. above below surface.

ft. rept. meas. 19 above below   which is ft. above below surface.

ft. rept. meas. 19 above below   which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, abandoned in 1954

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis   Laboratory

Temp. °F, Date sampled for analysis   Laboratory

Temp. °F, Date sampled for analysis   Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom   Date 7-30 1975

Source of Data Bull. 5709

16. Remarks: 19,800 GPD 1960 Inv. of Usage

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, ft. from	Setting, ft. to
8			
7			

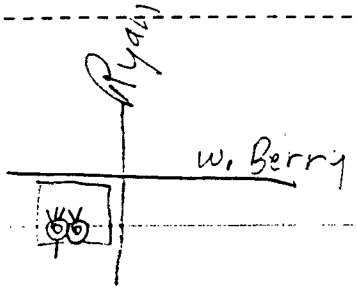
WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	Setting, ft. to

Business For Sale

CLOSED



TWDBE-WD-2

(Sketch)

32-22-402

08

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kpa   Field No. ________   State Well No. 32-13-916

Owner's Well No. ________   County TARRANT

1. Location: ___1/4, ___1/4 Sec. ______, Block ________ Survey ________

2. Owner: T.F. Page   Address: 403 Isbell Rd., Ft. Worth, Tex

Tenant: Mobile home Park   Address: ________

Driller: Ticknor Drilling Service   Address: 1511 W Sanford, Arlington, Tex.

3. Elevation of LSD is 545 ft. above msl, determined by Topo

4. Drilled: 11-20 1969; Dug, Cable Tool, Rotary

5. Depth: Rept. 241 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ________ Type Sub m.

No. Stages ____, Bowls Diam. ____ in., Setting 189 ft.

Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel Elect Make & Model ________ HP. 5

9. Yield: Flow ____ gpm, Bailed 30 gpm, Meas., Rept., Est. Driller

10. Performance Test: Date ____ Length of Test ____ Made by ____

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ____ gpm Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 212 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	steel	0	212

11. Water Level: 96.0 ft. rept. meas. 11-20 1969 above below G.L. which is ____ ft. above below

____ ft. rept. meas. 19 above below which is ____ ft. above below

____ ft. rept. meas. 19 above below which is ____ ft. above below

____ ft. rept. meas. 19 above below which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. ____ °F, Date sampled for analysis ________ Laboratory ________

Temp. ____ °F, Date sampled for analysis ________ Laboratory ________

Temp. ____ °F, Date sampled for analysis ________ Laboratory ________

WELL SCREEN

Screen Openings ________

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	Gun Perf 5 shots	174	178
6 5/8	5 shots	190	194
6 5/8	8 shots	201	208

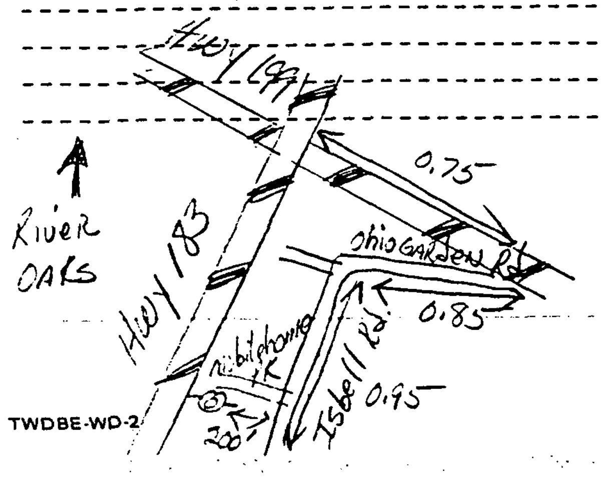
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Gene Davis Date 6-23 1977

Source of Data DL, + OGS

16. Remarks:

NO ONE At office G.D.



TWDBE-WD-2   (Sketch)

32-13-916

08

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy

Field No. ______

Owner's Well No. ______

State Well No. 32-13-914

County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
1/4 m E. Intersection of Roberts Cutoff & White Sett. Rd.

2. Owner: Texas Mobile Home Park Address: 4833 White Settlement Rd.

Tenant: (L. LIND) Address: ______

Driller: WATTS Drilling Co. Address: Rt. 5, Box 273-L, Ft. Worth

3. Elevation of LSD is 582 ft. above msl, determined by TOPO

4. Drilled: MAR 1969; Dug, Cable Tool, Rotary,

5. Depth: Rept. 280 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. BERKELEY Type SUBM.

No. Stages ___, Bowls Diam. ___ in., Setting 215 ft.

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel ELEC Make & Model ______ HP. 3

9. Yield: Flow ___ gpm, Pump 40 gpm, Meas., Rept., Est.

10. Performance Test: Date ___ Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production ___ gpm Specific Capacity ___ gpm/ft.

11. Water Level: 165 ft. rept. meas. MAR 1969 above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ______ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: R. Nordstrom Date 6-3 1975

Source of Data obs.

16. Remarks:

CASING & BLANK PIPE

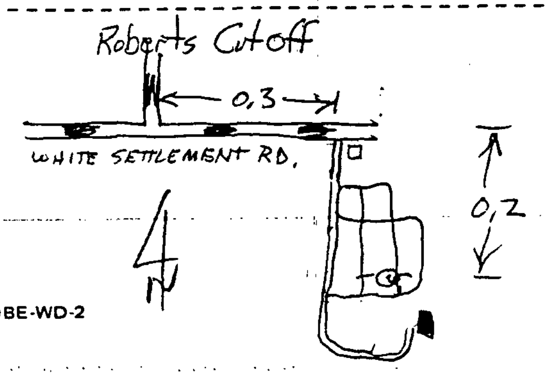
Cemented From 0 ft. to 200 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	Steel	+1	22

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

083

32-13-914

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy Field No. ______ State Well No. 32-13-913

Owner's Well No. ______ County TARRANT

1. Location: ___1/4, ___1/4 Sec. ___, Block ___ Survey ___

2. Owner: Green Acres Mobil Home Park Address: 402 Isbell St., Ft. Worth

Tenant: ______ Address: ______

Driller: Ticknor Drilling Service Address: ______

3. Elevation of LSD is 548 ft. above msl, determined by TOPO

4. Drilled: 11-26 1969; Dug, Cable Tool, Rotary

5. Depth: Rept. 241 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ______ Type Subm.

No. Stages ___, Bowls Diam. ___ in., Setting 189 ft.

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel Elec Make & Model ______ HP. 3

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est.

10. Performance Test: Date 11-26-69 Length of Test 1/2 hr Made by Ticknor

Static Level 90 ft. Pumping Level 110 ft. Drawdown 20 ft.

Production 30 gpm Specific Capacity 1.5 gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 212 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	steel	0	212

11. Water Level: 90 ft. rept. 11-26 1969 above/below ______ which is ___ ft. above/below su[illegible]

___ ft. rept./meas. 19__ above/below ______ which is ___ ft. above/below su[illegible]

___ ft. rept./meas. 19__ above/below ______ which is ___ ft. above/below su[illegible]

___ ft. rept./meas. 19__ above/below ______ which is ___ ft. above/below su[illegible]

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

WELL SCREEN

Screen Openings ______

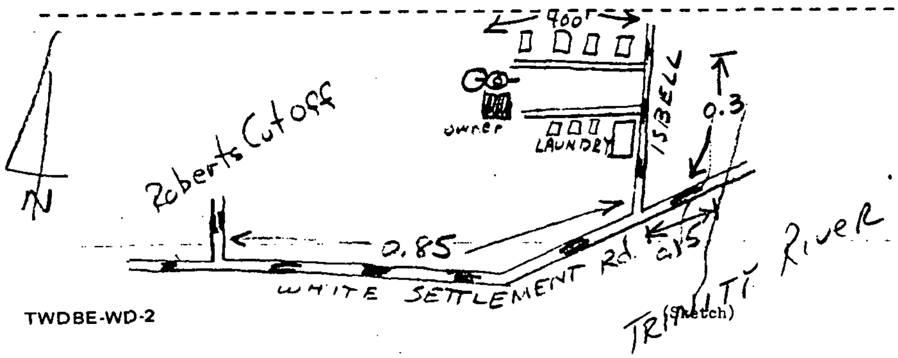
Diam. (in.)	Type	Setting, ft. from	to	S[illegible]
6 5/8	Gun Perf.	174	178	5
"	"	190	194	5
"	"	201	208	8

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 6-3 1975

Source of Data owner, obs

16. Remarks:



(Sketch)

TWDBE-WD-2

084

32-13-913

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy

Field No.

Owner's Well No. 1

State Well No. 32-21-306

County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey

2. Owner: MidContinent Recreation Address:

Tenant: Address:

Driller: Address:

3. Elevation of LS is 580 ft. above msl, determined by TOPO

4. Drilled: 19 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 360 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Red JACKET Type SUBM

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elec. Make & Model HP. 5

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
7	steel		

11. Water Level: ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: A NORDSTROM Date 9-22 1975

Source of Data MR. WATTS, obs

16. Remarks:

see-304

(Sketch)

TWDBE-WD-2

085

32-21-306

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No.

Owner's Well No. 2

State Well No. 32-21-305

County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey

2. Owner: Mid-Continent Recreation Address:

Tenant: Address:

Driller: Watts Drilling Co. Address:

3. Elevation of LS is 580 ft. above msl, determined by TOPO

4. Drilled: 12-18 1971; Dug, Cable Tool, Rotary

5. Depth: Rept. 400 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Fairbanks-Morse Type SUBm

No. Stages, Bowls Diam. in., Setting 388 ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elec. Make & Model HP. 10

9. Yield: Flow gpm, Pump 55 gpm, Meas, Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: 156 ft. rept. meas. 12-18 1971 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: D. NORDSTROM Date 9-22 1975

Source of Data obs, Mr. Watts

16. Remarks:

CASING & BLANK PIPE

Cemented From 0 ft. to 265 ft.

Diam. (in.)	Type	Setting, ft. from	to
7	steel	0	400

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

see - 304

(Sketch)

TWDBE-WD-2

086

32-21-305

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. ____   State Well No. 32-21-304

Owner's Well No. 3   County Tarrent

1. Location: ___1/4, ___1/4 Sec.___, Block ___ Survey ___

2. Owner: Mid-Continent Recreation Address: ___

Tenant: ___ Address: ___

Driller: Watts Drilling Co. Address: ___

3. Elevation of LS is 580 ft. above msl, determined by TOPO

4. Drilled: AUG 1971; Dug, Cable Tool, Rotary,

5. Depth: Rept. 423 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. FAIRBANKS-Morse Type Subm

No. Stages ___, Bowls Diam. ___ in., Setting 378 ft.

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel ELEC. Make & Model ___ HP. 15

9. Yield: Flow ___ gpm, Pump 60 gpm, Meas., Rept., Est.

10. Performance Test: Date ___ Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production ___ gpm Specific Capacity ___ gpm/ft.

11. Water Level: 228 ft. rept. meas. 8 1971 above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19___ above below ___ which is ___ ft. above below surface.

12. Use: Dom. Stock, Public Supply, Ind., Irr. Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp.___ °F, Date sampled for analysis ___ Laboratory ___

Temp.___ °F, Date sampled for analysis ___ Laboratory ___

Temp.___ °F, Date sampled for analysis ___ Laboratory ___

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 9-22 1975

Source of Data obs. Mr. Watts

16. Remarks:

CASING & BLANK PIPE

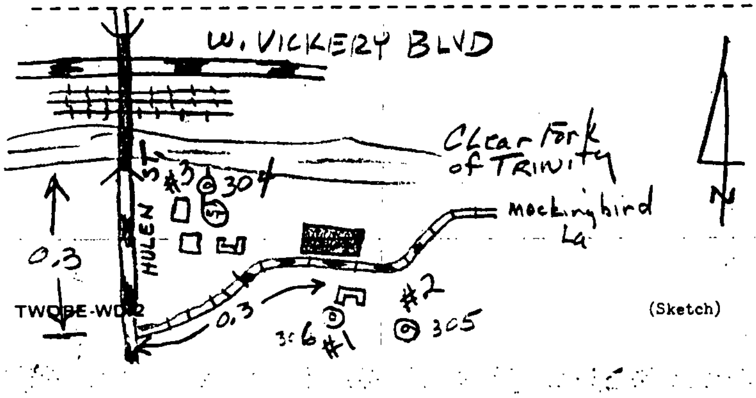
Cemented From 0 ft. to 420 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	steel	+1	42

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	Jet Perf		



(Sketch)

TWDBE-WD-2

087

32-21-304

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-136   State Well No. 32-21-302
Owner's Well No. 2   County TARRANT

1. Location: ____1/4, ____1/4 Sec.____, Block ________ Survey ________

2. Owner: CITY OF WESTOVER HILLS Address:
Tenant: -- Address:
Driller: Texas Water Wells, Inc. Address:

3. Elevation of LS is 680 ft. above msl, determined by TOPO

4. Drilled: MAR 1949; Dug, Cable Tool, Rotary,

5. Depth: Rept. 985 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ________ Type T
No. Stages ____, Bowls Diam. ____ in., Setting ____ ft.
Column Diam. ____ in., Length Tailpipe ____ ft. NONE

8. Motor: Fuel E Make & Model ________ HP. 75

9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est.

10. Performance Test: Date 3/49 Length of Test 1 day Made by driller
Static Level 413 ft. Pumping Level 673 ft. Drawdown 260 ft.
Production 265 gpm Specific Capacity 1.02 gpm/ft.

CASING & BLANK PIPE

Cemented From ____ ft. to ____

Diam. (in.)	Type	Setting, ft. from	to
10			
7			

11. Water Level:

413 ft.	rept.	3	1949	above/below	which is ____ ft.	above/below surface.
486 ft.	rept.	3	1952	above/below	which is ____ ft.	above/below surface.
544.7 ft.	meas.	8-6	1953	below lsd	which is ____ ft.	above/below surface.
494.6 ft.	meas.	3-24	1954	below lsd	which is ____ ft.	above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. -- °F, Date sampled for analysis 11-53 Laboratory TSDH
Temp. ___ °F, Date sampled for analysis ____ Laboratory ____
Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

WELL SCREEN

Screen Openings ____

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. L. NORDSTROM Date 7-29 1975
Source of Data Bull. 5709, obs, MR. Reed

16. Remarks:
~~can be logged~~

~~22~~-301

(Sketch)

088

TWDBE-WD-2

32-21-302

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-135

Owner's Well No. 3

State Well No. 32-21-301

County TARRANT

1. Location: ____1/4, ____1/4 Sec.____, Block________ Survey________

2. Owner: CITY OF WESTOVER HILLS Address:

Tenant: Address:

Driller: H. MILLICAN Address:

3. Elevation of LS is 620 ft. above msl, determined by TOPO

4. Drilled: 1949; Dug, Cable Tool, Rotary,

5. Depth: Rept. 362 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ____ Type T

No. Stages____, Bowls Diam.____in., Setting____ft.

Column Diam.____in., Length Tailpipe____ft.

8. Motor: Fuel E Make & Model ____ HP. 15

9. Yield: Flow____gpm, Pump____gpm, Meas., Rept., Est.

10. Performance Test: Date____ Length of Test____ Made by rept.

Static Level____ft. Pumping Level____ft. Drawdown 75 ft.

Production 55 gpm Specific Capacity 0.73 gpm/ft.

11. Water Level: 126 ft. rept. 1949 above/below ____ which is ____ ft. above/below surface.

140.7 ft. meas. 1-12-1955 below lsd which is ____ ft. above/below surface.

____ ft. rept./meas. 19__ above/below ____ which is ____ ft. above/below surface.

____ ft. rept./meas. 19__ above/below ____ which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used; plugged

13. Quality: (Remarks on taste, odor, color, etc.)

Temp.____°F, Date sampled for analysis 11-53 Laboratory TSDH

Temp.____°F, Date sampled for analysis ____ Laboratory ____

Temp.____°F, Date sampled for analysis ____ Laboratory ____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 7-29 1975

Source of Data Bull. 5709, obs.

16. Remarks:

~~can be taped~~

CASING & BLANK PIPE

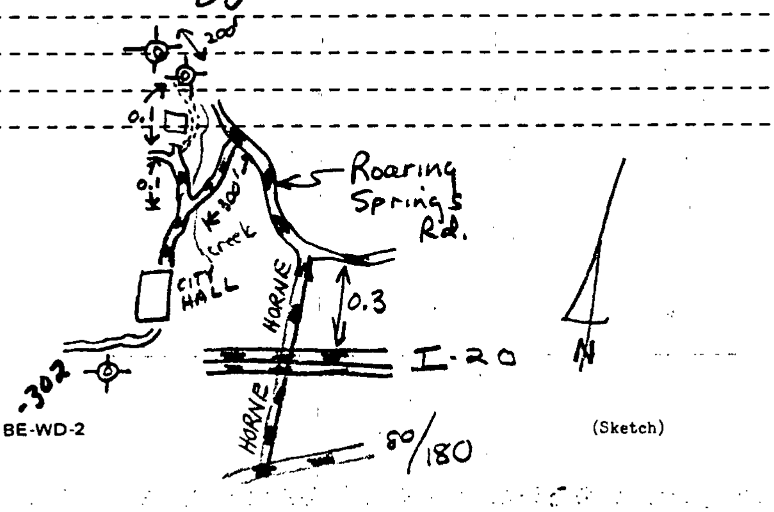
Cemented From ____ ft. to ____ ft.

Diam. (in.)	Type	Setting, ft. from	to
10			

WELL SCREEN

Screen Openings ____

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

089

32-21-301

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kgr   Field No. E-163   State Well No. 32-14-809

Owner's Well No.   County TARRANT

1. Location: ____1/4, ____1/4 Sec. ____, Block ____ Survey ____

* 2. Owner: MILNER HOTEL   Address: 820 MAIN

Tenant: Address:

Driller: Q. D. Lewis   Address:

3. Elevation of LS is 603 ft. above msl, determined by TOPO

4. Drilled: -old- = 1922; Dug, Cable Tool, Rotary,

5. Depth: Rept. 750 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ____ Type TURB

No. Stages ____, Bowls Diam. ____ in., Setting 500 ft.

Column Diam. ____ in., Length Tailpipe ____ ft.   NONE

8. Motor: Fuel Elec. Make & Model ____ HP. 20

9. Yield: Flow ____ gpm, Pump 60 gpm, Meas., Rept., Est.

10. Performance Test: Date ____ Length of Test ____ Made by ____

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ____ gpm Specific Capacity ____ gpm/ft.

11. Water Level: 306 ft. rept. 4 1947 above/below ____ which is ____ ft. above/below surface.

308.6 ft. meas. 10-3 1949 below lsd which is ____ ft. above/below surface.

309.8 ft. meas. 1-30 1955 below lsd which is ____ ft. above/below surface.

____ ft. rept./meas. ____ 19__ above/below ____ which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, destroyed

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. __ °F, Date sampled for analysis 10-3-49 Laboratory USGS

Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: R. L. NORDSTROM   Date 9-17 1975

Source of Data Bull. 5709 DBS

16. Remarks: 1960 29,000 gpd

* property to be vacated by 1960

Bldg. completely gone

CASING & BLANK PIPE			
Cemented From ____ ft. to ____			
Diam. (in.)	Type	Setting, ft. from	to
8	steel		

WELL SCREEN			
Screen Openings ____			
Diam. (in.)	Type	Setting, ft. from	to

see -808

(Sketch)

090

TWDBE-WD-2

32-14-809

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer KCTM   Field No. E-147   State Well No. 32-14-807

Owner's Well No. 3   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
N. MAIN
2. Owner: Texas Electric Service Co.   Address:
Tenant: Address:
Driller: H. P. NICHOLS   Address:
3. Elevation of LSD is 530 ft. above msl, determined by TOPO
4. Drilled: 1911; Dug, Cable Tool, Rotary,
5. Depth: Rept. 1000 ft. Meas. 995 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. ___ Type T
No. Stages ___, Bowls Diam. ___ in., Setting 657 ft.   NONE
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel E Make & Model ___ HP. ___
9. Yield: Flow ___ gpm, Pump 100 gpm, Meas., Rept., Est. 11-20-45
10. Performance Test: Date ___ Length of Test ___ Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
Production ___ gpm Specific Capacity ___ gpm/ft.
11. Water Level: 392.7 ft. meas. 3-11 1949 below ___ which is ___ ft. above/below surface.
443.55 ft. meas. 11-30 1953 below TOP OF CASING which is 0.52 ft. above surface.
___ ft. rept./meas. ___ 19__ above/below ___ which is ___ ft. above/below surface.
___ ft. rept./meas. ___ 19__ above/below ___ which is ___ ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used   abd. in 1968
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. 75 °F, Date sampled for analysis 6-14-49 Laboratory USGS
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: P. Nordstrom   Date 5-8 1975
Source of Data TESCO, Bulletin 5709
16. Remarks:

CASING & BLANK PIPE
Cemented From ___ ft. to ___

Diam. (in.)	Type	Setting, f from	to
10 3/4	Steel	0	5
8 5/8	"	0	6
6 5/8	"	616	8
5	Liner	831	[illegible]

WELL SCREEN
Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to
5	slotted Screen	883	995

see 32-14-701

(Sketch)

TWDBE-WD-2

691

32-14-807

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains   Field No. (E-183) 46   State Well No. 32-14-802
Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: Ft. Worth & Denver R.R. Address:
Tenant: Address:
Driller: Q. D. Lewis Address:

3. Elevation of LSD is 600 ft. above msl, determined by TOPO

4. Drilled: old 19 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. ± 1000 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft.

NONE

8. Motor: Fuel Make & Model HP.

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE
Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
5			

11. Water Level: 323.60 ft. rept. meas. 4-15 1942 above below which is ft. above below surface.
419.95 ft. rept. meas. 7-22 1949 above below which is ft. above below surface.
429.98 ft. rept. meas. 6-1 1951 above below which is ft. above below surface.
480.20 ft. rept. meas. 4-21 1955 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, ~~Ind~~, Irr., Waterflooding, Observation, Not Used
HIST.

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN
Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,

15. Record by: PIHRDSTROM Date 5-1 1975
Source of Data Bulletin 5709

16. Remarks: under tracks leading to long red shop near roundhouse

Obs Well

092

TWDBE-WD-2   (Sketch)

32-14-80

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy | Field No. | State Well No. 32-14-724
Owner's Well No. | County TARRANT

1. Location: ____ 1/4, ____ 1/4 Sec. ____, Block ____ Survey ____

2. Owner: J. H. MASSEY Address: 2101 Jacksboro Hwy, Ft. Worth, Tex.
Tenant: Rockwood Motel + Club Massey Address: SAME
Driller: UKN Address:

3. Elevation of LS is 570 ft. above msl, determined by Topo

4. Drilled: 1939; Dug, Cable Tool, Rotary,

5. Depth: Rept. 210 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ____ Type Sub'm
No. Stages ____, Bowls Diam. ____ in., Setting ____ ft.
Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel Elect Make & Model ____ HP. 2

9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est.

10. Performance Test: Date ____ Length of Test ____ Made by ____
Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.
Production ____ gpm Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE

Cemented From ____ ft. to ____ ft

Diam. (in.)	Type	Setting, ft. from	to
7	steel	0	210

11. Water Level: 40.0 ft. rept. meas. 12-15 1977 above below LSD By OWNER which is ____ ft. above below surface.
____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____
Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

WELL SCREEN

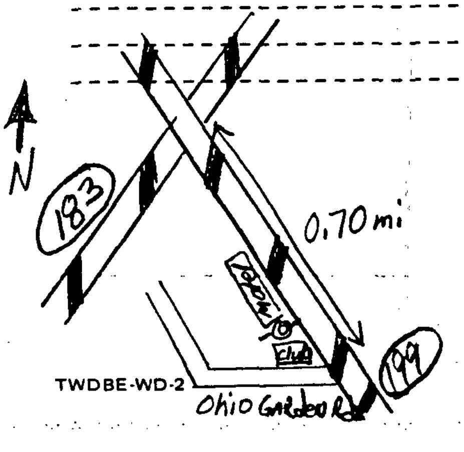
Screen Openings ____

Diam. (in.)	Type	Setting, ft. from	to
7	slotted	?	

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Gene Davis Date 12-15 1977
Source of Data OWNER + obs

16. Remarks:



TWDBE-WD-2

(Sketch)

✓

093

32-14-724

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm Field No. E-155 State Well No. 32-14-713

Owner's Well No. ______ County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___

2. Owner: Medical Arts Bldg. Address: ___

Tenant: ___ Address: ___

Driller: ___ Address: ___

3. Elevation of LS is 610 ft. above msl, determined by TOPO

4. Drilled: ? (JAN 1944) Dug, Cable Tool, Rotary, ___

5. Depth: Rept. 1028 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ___

7. Pump: Mfgr. ___ Type T

No. Stages ___, Bowls Diam. ___ in., Setting 620 ft.

Column Diam. ___ in., Length Tailpipe ___ ft. none

8. Motor: Fuel E Make & Model ___ HP. ___

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est. ___

10. Performance Test: Date 1-44 Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown 53 ft.

Production 100 gpm Specific Capacity ___ gpm/ft.

CASING & BLANK PIPE			
Cemented From ___ ft. to ___ ft			
Diam. (in.)	Type	Setting, ft. from	to
10			

11. Water Level:

Level	rept./meas.	Date	above/below	which is	above/below surface
384 ft.	rept	1 1944	above below	which is ___ ft.	above below surface.
418 ft.	rept	3 1946	above below	which is ___ ft.	above below surface.
470 ft.	rept	11 1948	above below	which is ___ ft.	above below surface.
___ ft.	rept. meas.	19__	above below	which is ___ ft.	above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used

13. Quality: (Remarks on taste, odor, color, etc.) ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

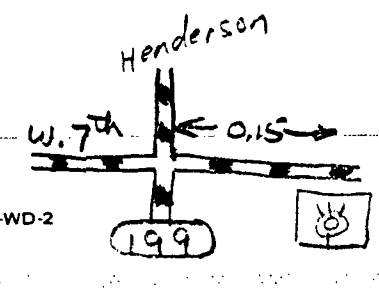
WELL SCREEN			
Screen Openings ___			
Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test, ___

15. Record by: [illegible] Date 7-[illegible] 1975

Source of Data Bull 5709

16. Remarks: ___



TWDBE-WD-2

(Sketch)

094

32-14-713

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains   Field No. E-148   State Well No. 32-14-702

Owner's Well No. 2   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
N. MAIN PLANT
2. Owner: Texas Electric Service Co. Address:
Tenant: Address:
Driller: H.P. NICHOLS Address: Petrolia
3. Elevation of LSD is 525 ft. above msl, determined by Topo
4. Drilled: 1911; Dug, Cable Tool, Rotary,
5. Depth: Rept. 969 ft. Meas. 952 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type Turb
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft. NONE
8. Motor: Fuel ELEC Make & Model HP. 75
9. Yield: Flow gpm, Pump 265 gpm, Meas., Rept., Est. 8-10-54
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10 3/4	Steel	0	504
8 5/8	"	0 ~~468~~	584 ~~855~~
6 5/8	Liner	584 ~~842~~	855 ~~964~~
5	"	830	952

11. Water Level: 462.6 ft. rept. meas. 11-24 1953 above below LSD which is ft. above below surface.
~~[illegible]~~ ft. rept. meas. 19 above below which is ft. above below surface.
534.02 ft. rept. meas. 8-12 1954 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, ~~Public Supply~~, Ind., Irr., Waterflooding, Observation, Not Used. plugged '72 / abd. in 1960
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: P. Nordstrom Date 5-8 1975
Source of Data Tesco, Bull. 5709
16. Remarks: T = 2,600 S = 9.5×10^{-5}

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
~~6~~	~~Perf~~	~~860~~	~~964~~
5	slotted screen	855	952

see 32-14-701

(Sketch)

TWDBE-WD-2

095

32-14-702

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains   Field No. E-149   State Well No. 32-14-701
Owner's Well No. 1   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
N. MAIN PLANT
2. Owner: Texas Electric Service   Address:
Tenant: (orig) Ft. Worth Power & Light Co.   Address:
Driller: H. P. NICHOLS   Address: PETROLIA
3. Elevation of LSD is 515 ft. above msl, determined by TOPO
4. Drilled: 1911; Dug, Cable Tool, Rotary,
5. Depth: Rept. 969 ft. Meas. 964 ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft.   NONE
8. Motor: Fuel Make & Model HP.
* 9. Yield: Flow gpm, Pump 247 gpm, Meas., Rept., Est. 12/3/53
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, ft. from	to
10 3/4	steel	0	504
8 5/8	"	~~455~~ 0	~~860~~ 600
6 5/8	steel	600	867
5	Liner	833	964

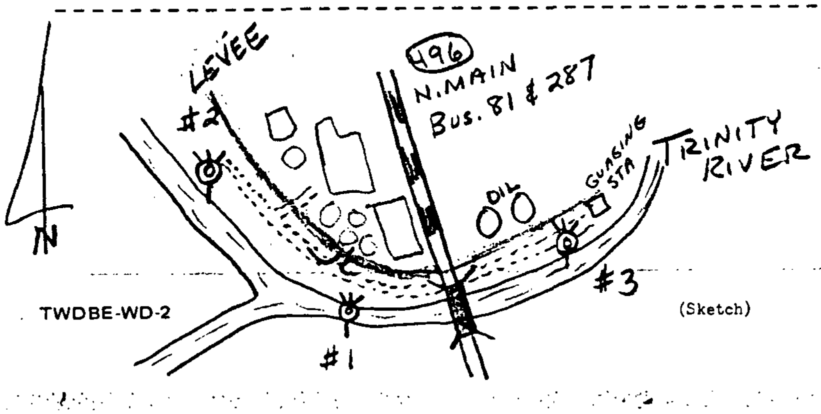
(X) 11. Water Level: 175 ft. rept. 6 1912 above/below which is ft. above/below surface.
488.6 ft. meas. 8-4 1954 above/below which is ft. above/below surface.
326 ft. meas. 7-21 1944 above/below which is ft. above/below surface.
428 ft. rept./meas. 3-13 1952 above/below which is ft. above/below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used. plugged in 1954
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. 75 °F, Date sampled for analysis 6-8-54 Laboratory USGS
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test.
15. Record by: R. NORDSTROM Date 5-8 1975
Source of Data TESCO

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
	~~open~~	~~860~~	~~964~~
5	slotted screen	867	964

16. Remarks: T = 2,600 gpd/ft S = 4.5x10-5
* 146 gpm on 10-1-25 ; 150 gpm on 10-2-45
(X) well in channel of TRINITY RIVER NOW
497.31' meas 12-3-53
reworked 10-2-45 - added 6" & 5" Liner   SW 4395 on blueprint



TWDBE-WD-2   (Sketch)

096
32-14-701

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-215   State Well No. 32-22-211

Owner's Well No. #2   County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___

2. Owner: St. Joseph Hospital   Address: 1401 S. Main

Tenant: Address:

Driller: Layne-Texas Co   Address:

3. Elevation of LS is 673 ft. above msl, determined by TOPO

4. Drilled: oct. 1941; Dug, Cable Tool, Rotary,

5. Depth: Rept. 515 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ___ Type T

No. Stages ___, Bowls Diam. ___ in., Setting ___ ft.   NONE

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel E   Make & Model ___ HP. 20

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est.

10. Performance Test: Date 10/29/41 Length of Test 1 day Made by L-T

Static Level 319 ft. Pumping Level 390 ft. Drawdown 71 ft.

Production 100 gpm Specific Capacity 1.41 gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 382 ft.

Diam. (in.)	Type	Setting, ft. from	to
10	steel	0	430
8	liner	430	515

11. Water Level: 319 ft. rept. meas. 10-29 1941 above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used as of 1960

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. 72 °F, Date sampled for analysis 6-13-49 Laboratory USGS

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

WELL SCREEN

Screen Openings ___

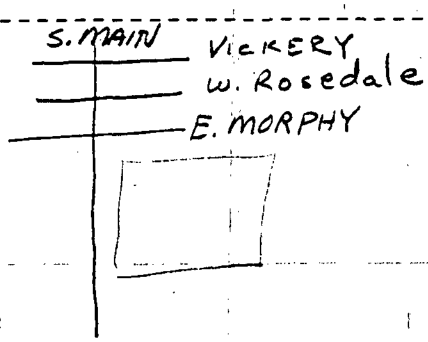
Diam. (in.)	Type	Setting, ft. from	to
8	screen	439	441
8	"	461	471
8	"	485	497

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: [illegible]   Date 7-30 1975

Source of Data Bull. 5709, M-78

16. Remarks:



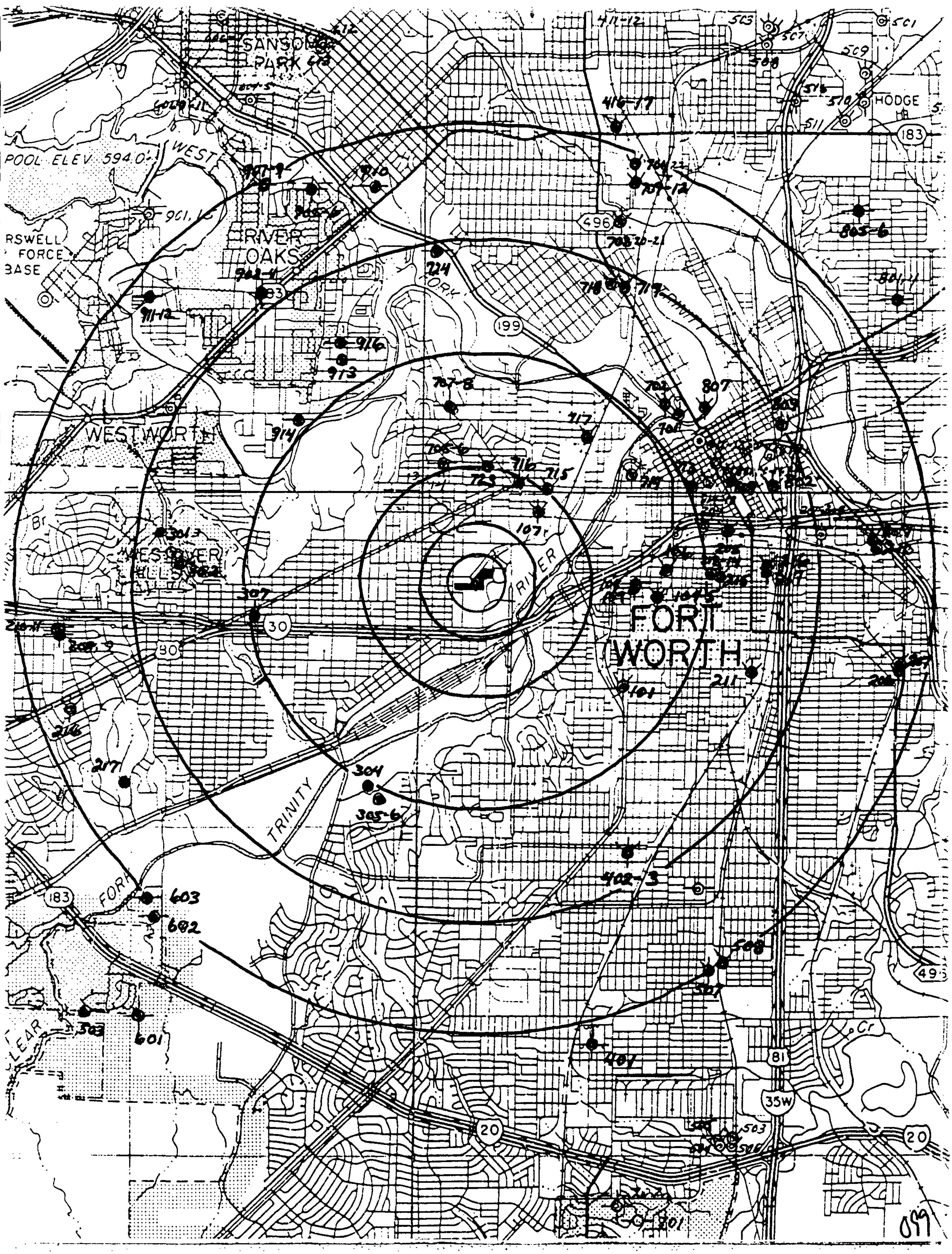
TWDBE-WD-2   (Sketch)

097

32-22-211

4 MILE

LOCATED


SANSOM PARK
POOL ELEV 594.0
WEST
RIVER OAKS
RSWELL
FORCE
BASE
WESTWORTH
HILLS
FORK
TRINITY
RIVER
FORT WORTH
HODGE
183
199
496
30
80
20
81
35W
724
916
913
914
307
304
305-6
217
216
603
602
601
303
401
402-3
508
507
211
101
807
702
717
715
716
725
707-8
805-6
911-12
210-11
107
099

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
—	.25	—	No	Wells	Found	—	—	—
—	.5	—	No	Wells	Found	—	—	—
32-22-107	1	286	—	—	I	1946	—	Monarch Laundry
32-14-716	1	309	210	—	I/plugd	1948	Kp	Manhanton Cleaners
〃 -715	2	261	168	—	I	1953	Kp	Kites Custom
〃 -723	2	350	—	—	I	—	KCPA	Sanitary Water Co.
〃 -705	2	998	486	—	Plugged	1943	Ktm	Tx. Water Co.
〃 -706	2	306	240	—	Plugged	1943	Kp	Tx Water Co.
〃 -707	2	750	364	—	Plugged	1943	Ktm	Tx. Water Co.
〃 -708	2	254	173	—	Plugged	1941	Kp	Tx. Water Co.
〃 -717	2	351	220	—	I	1964	Paluxy	Clean Towel + Laundry
〃 -714	2	—	File	Not	Found	—	—	—
32-22-106	2	—	File	Not	Found	—	—	—
〃 -104	2	396	293	313-396	I	1937	—	Harris Hospital
〃 -105	2	455	—	292-413	I	1959	—	〃
〃 -108	2	—	File	Not	Found	—	—	—
〃 -109	2	—	〃	〃	〃	—	—	—
〃 -101	2	429	—	409-429	I	1975	—	Bertrand
32-21-307	2	384	270	284-323 330-360	I	1955	Paluxy	Champlin Refinery
32-13-941	3	280	165	—	PS	1969	Paluxy	Tx. Mobile Home Park
〃 -913	3	241	90	174-208	PS	1969	〃	Green Acres Mobile Homes
〃 -916	3	241	96	174-208	PS	1969	Kpa	Page
32-14-724	3	210	40	—	D	1939	Paluxy	J. H. Massey
32-14-718	3	375	—	—	I	1926	Kp	Ft. Worth Laundry

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-14-719	3	—	File	Not	Found	—	—	—
✓ 11 -702	3	969	534	855-952	Plugged	1911	Tw. Mnts	Tex. Elec. Service
✓ - 701	3	969	428	867-964	Plugged	1911	11	Tex. Elec. Co.
✓ 11 -807	3	1000	443	883-995	I/Plugged	1911	Kctm	Tx. Elec. Service
✓ 11 -713	3	1028	470	—	I/O	1944	Ktm	Med. Arts Bldg.
✓ 11 -809	3	750	309	—	Plugged	—	—	Milner Hotel
✓ 11 -802	3	+1000	480	—	O	—	Tw. Mnts	Ft. Worth Railroad
✓ 32-22-205	3	1095	548	—	I	1932	Twin Mountains	U.S. Post Office
✓ 11 -212	3	420	336	—	I	1929	Kp	Tx. Garmet. + Linen
✓ 11 -213	3	1072	463	—	I	1948	Ktm	11
✓ 11 -214	3	434	331	351-376 393-434	I	1953	Kp	Star Uniform
✓ 11 -215	3	445	315	—	I	1941	Kpa	Car Shop
✓ 11 -216	3	365	341	—	I	—	Kp	Foremost Dairies
✓ 11 -217	3	430	—	—	—	Plugged 1975	—	11
✓ 11 -211	3	515	319	435-441 461-471 485-497	I/Plugged	1941	Kp	St. Joseph Hospital
✓ 32-22-402	3	449	338	—	I	—	Kp	Backus Laundry
✓ 11 -403	3	410	—	—	I	1954	Paluxy	Backus Laundry
✓ 32-21-304	3	423	228	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 -305	3	400	156	—	Irr	1971	Kp	Mid. Cont. Rec.
✓ 11 -306	3	360	—	—	Irr	—	Paluxy	Mid. Continent Recreation
✓ 11 -302	3	985	494	—	—	Plugged	—	—
✓ 11 -301	3	362	140	—	—	Plugged	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name TRINITY Valley Iron
Well Type LOCATED
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
32-13-911	4	200	—	—	I	1968	Paluxy	PEEIC
11 - 912	4	200	70	150-200	PS	1971	Kp	EAST GATE MOBILE HMS.
11 - 902	4	834	400	768-834	—	plugged	—	—
11 - 903	4	320	154	—	—	plugged	—	—
11 - 904	4	256	151	—	—	plugged	—	—
11 - 907	4	330	—	—	PS	1942	Kp	SANSUM PARK
11 - 908	4	963	481	—	—	Plugged 1952	TWIN MNTS	SANSOM PARK
11 - 909	4	376	251	—	PS	1952	Kp	SANSOM PARK
11 - 905	4	985	450	—	—	Plugged 1944	—	—
11 - 906	4	340	217	—	—	Plugged 1944	—	—
11 - 910	4	334	260	304-325	D	1972	Kp	Minton
32-14-704	4	728	452	—	O	1902	Twin Mnts	Armour
11 - 709	4	980	—	—	I/O	1937	Ktm	Swift Co
11 - 710	4	987	528	855-958	I/O	1944	Ktm	Swift Co
11 - 711	4	973	812	855-973	I/O	1954	Ktm	Swift Co
11 - 712	4	981	—	847-958	I/O	1954	Ktm	Swift Co.
11 - 703	4	39	5.2	—	I	—	Alluvin	Rosenthal Fre. Co.
32-22-209	4	—	File	NOT	Found	—	—	—
11-210	4	1189	680	978-1095	I	1965	Twin Mnts	GREAT WESTERN FOOD Co.
11 - 207	4	1100	—	1000-1100	I	1972	TWIN MOUNT.	BEST MAID PRODUCTS
11 - 206	4	380	298	—	—	Plugged 1954	—	BEST MAID PRODUCTS
11 - 507	4	506	—	—	—	Plugged 1954	—	TEXAS STEEL CO.
32-21-603	—	File	NOT	FOUND	—	—	—	—

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

Site Name Trinity Valley Iron
Well Type Located
Date 10/1/96

State Well Number	Miles From Site	TD	SWL	Screened Interval	Type	Date Drilled	Water Bearing Formation	Owner
✓ 32-21-217	4	272	180	—	Irr	1972	Paluxy	Clinton Wright.
✓ 11-216	4	306	233	—	Plugged	—	—	Western Hills Hotel
✓ 11-208	4	250	—	—	plugged	—	—	White Settlement
✓ 11-209	4	324	251	—	Plugged	—	—	TX. Water Co.
✓ 11-210	4	380	—	—	plugged	—	—	TX. Wtr. Co.
✓ 11-211	4	390	251	—	Plugged	1941	Kp	TX. Water Co.

Type: D - Domestic, S - Stock, PS - Public Supply, M- Monitor, ND - Not Drinking, I - Industrial, EL - Electric Log, Obs - Observation, Irr - Irrigation, T - Test, O - Other

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-218

Owner's Well No. 2

State Well No. 32-22-206

County TARRANT

1. Location: ____ 1/4, ____ 1/4 Sec. ____, Block ____ Survey ____

2. Owner: Best Maid Products Address: ____

Tenant: ____ Address: ____

Driller: -- Pennington Address: ____

3. Elevation of LS is 600 ft. above msl, determined by TOPO

4. Drilled: 1954; Dug, Cable Tool, Rotary,

5. Depth: Rept. 380 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ____

7. Pump: Mfgr. ____ Type T

No. Stages ____, Bowls Diam. ____ in., Setting ____ ft. NONE

Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel E Make & Model ____ HP. ____

9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est. ____

10. Performance Test: Date ____ Length of Test ____ Made by ____

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ____ gpm Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE			
Cemented From ____ ft. to ____ ft.			
Diam. (in.)	Type	Setting, ft. from	to
5	steel	0	380

11. Water Level: 298.2 ft. rept. meas. 1-30 1955 above below lsd which is ____ ft. above below surface.

____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used, plugged

13. Quality: (Remarks on taste, odor, color, etc.) ____

Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

Temp. ____ °F, Date sampled for analysis ____ Laboratory ____

WELL SCREEN			
Screen Openings ____			
Diam. (in.)	Type	Setting, ft. from	to

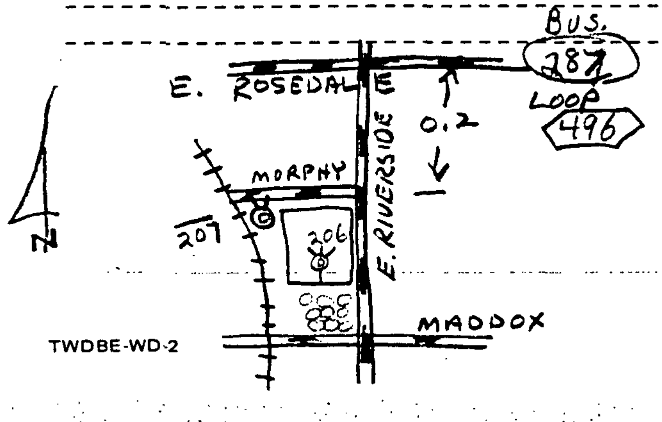
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P.L. Nordstrom Date 7-29 1975

Source of Data Bull. 5709, Mr. Nichols

16. Remarks:

located under conc floor of new bldg.



TWDBE-WD-2 (Sketch)

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32-22-206

T E X A S W A T E R D E V E L O P M E N T B O A R D

WELL SCHEDULE

Aquifer Twin Mountains | Field No. ______ | State Well No. 32-22-207
Owner's Well No. 6 | County TARRANT

1. Location: ____1/4, ____1/4 Sec. ____, Block ______ Survey ______ 76105
2 S. Courthouse @ Rosedale St. Box 32, Ft. Worth

2. Owner: Mrs. Daltons Best Maid Products Address: 1400 S. Riverside Dr., Ft. Worth
Tenant: ATTN: MR. NICHOLS Address: ______
Driller: Ward & Ward Drilling Co. Address: Box 8291, Ft. Worth

3. Elevation of LS is 600 ft. above msl, determined by TOPO

4. Drilled: 1-28 1972; Dug, Cable Tool, Rotary

5. Depth: Rept. 1100 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. KEOA Type SUBM.
No. Stages ____, Bowls Diam. ____ in., Setting 905 ft.
Column Diam. 3 in., Length Tailpipe ______ ft.

8. Motor: Fuel ELEC. Make & Model ______ HP. 30

9. Yield: Flow ____ gpm, Pump 93 gpm, Meas., Rept. Est. 1975

10. Performance Test: Date ______ Length of Test ______ Made by ______
Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.
Production ______ gpm Specific Capacity ______ gpm/ft.

11. Water Level: ______ ft. rept./meas. ______ 19__ above/below ______ which is ____ ft. above/below surface.
______ ft. rept./meas. ______ 19__ above/below ______ which is ____ ft. above/below surface.
______ ft. rept./meas. ______ 19__ above/below ______ which is ____ ft. above/below surface.
______ ft. rept./meas. ______ 19__ above/below ______ which is ____ ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. X °F, Date sampled for analysis 7-29-75 Laboratory TSDH
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______
Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,

15. Record by: Albrdstrom Date 7-29 1975
Source of Data [illegible]

16. Remarks:
35,000 gal/day 18000 gal - Sat
15 days/week

CASING & BLANK PIPE

Cemented From 0 ft. to 900 ft.

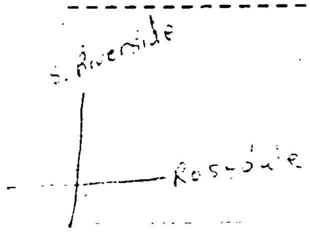
Diam. (in.)	Type	Setting, ft. from	to
8 5/8	steel	0	900
6 5/8	liner	880	1100

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	slotted	1000	1100

Mr Moore has sampled this well



E-log

105

see -206

TWDBE-WD-2

(Sketch)

32-22-207

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-235

State Well No. 32-22-507

Owner's Well No.

County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey

2. Owner: Texas Steel Co. Address:

Tenant: Address:

Driller: P. Dillbeck Address:

3. Elevation of LS is 693 ft. above msl, determined by TOPO

4. Drilled: 1954; Dug, Cable Tool, Rotary,

5. Depth: Rept. 506 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type Turb

No. Stages, Bowls Diam. in., Setting 435 ft.

Column Diam. in., Length Tailpipe ft. none

8. Motor: Fuel Elec Make & Model HP. 15

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used crooked hole - well aband.

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Phillip L. NORDSTROM Date 9-24 1975

Source of Data Bull. 5709

16. Remarks:

well never used

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
7	Steel		
5	Liner		

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

Well completely gone

± 1000' W of 508

(Sketch)

TWDBE-WD-2

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32-22-507

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. ____

Owner's Well No. 2

State Well No. 32-13-912

County TARRANT

1. Location: ___1/4, ___1/4 Sec. ___, Block 1 Brock Addition Survey ____

2. Owner: East Gate Mobil Home Park Address: 6200 Carswell Access Rd Ft. Worth

   Tenant: [redacted] Address: [redacted]

   Driller: H.E. Turbeville Water Well Contr. Address: 2829 E 1st, Ft. Worth

3. Elevation of LS is 570 ft. above msl, determined by Topo

4. Drilled: 10-12 1971; Dug, Cable Tool, Rotary,

5. Depth: Rept. 200 ft. Meas. ____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed,

7. Pump: Mfgr. ____ Type Subm

   No. Stages ____, Bowls Diam. ____ in., Setting 189 ft.

   Column Diam. ____ in., Length Tailpipe ____ ft.

8. Motor: Fuel elec Make & Model ____ HP. 10

9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est. ____

10. Performance Test: Date ____ Length of Test ____ Made by ____

    Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

    Production ____ gpm Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 100 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	steel	0	20

11. Water Level: 70 ft. rept. meas. 10-16 1971 above below ____ which is ____ ft. above below surface.

    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____

WELL SCREEN

Screen Openings ____

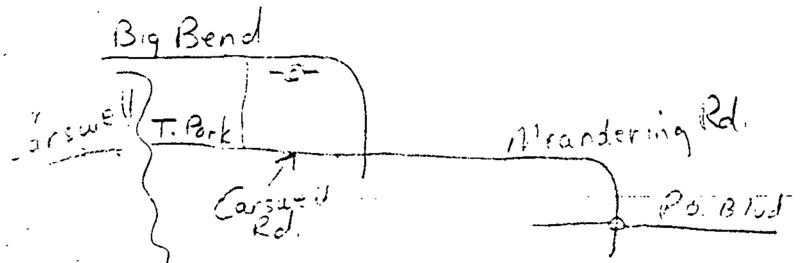
Diam. (in.)	Type	Setting, ft. from	to
6 5/8	Perf.	150	185
6 5/8	Perf.	187	200

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 6-3 1975

    Source of Data owner, obs.

16. Remarks:



see - 911

(Sketch)

TWDBE-WD-2

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32-13-912

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy
Field No.
Owner's Well No. 1
State Well No. 32-13-911
County TARRANT

1. Location: 1/4, 1/4 Sec. 1, Block A-264 Survey N. H. Carroll
3 mi. W. Tarrant Court House

2. Owner: (b) (6) [redacted] Address: (b) (6) [redacted]

Tenant: (do) business Address: 6112 Carswell Acres Ft Worth

Driller: REID Pump Sales Address:

3. Elevation of LSD is 570 ft. above msl, determined by TOPO

4. Drilled: 8-30 19 68; Dug, Cable Tool, Rotary,

5. Depth: Rept. 200 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. BERKELEY Type SUBM

No. Stages, Bowls Diam. in., Setting 180 ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel ELEC Make & Model HP. 5

9. Yield: Flow gpm, Pump 30 gpm, Meas. Rept. Est.

10. Performance Test: Date 8-30-68 Length of Test Made by Reid

Static Level ft. Pumping Level ft. Drawdown ft.

Production 85 gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 135 ft.

Diam. (in.)	Type	Setting, ft. from	to
8	steel	0	2(

11. Water Level:

ft.	rept. meas.	19	above below	which is ft.	above below surface.
ft.	rept. meas.	19	above below	which is ft.	above below surface.
ft.	rept. meas.	19	above below	which is ft.	above below surface.
ft.	rept. meas.	19	above below	which is ft.	above below surface.

12. Use: Dom., Stock, ~~Public Supply~~, ~~Ind.~~, Irr., Waterflooding, Observation, Not Used, SHOPPING CENTER

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
8	slotted	(20 ft.)	

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

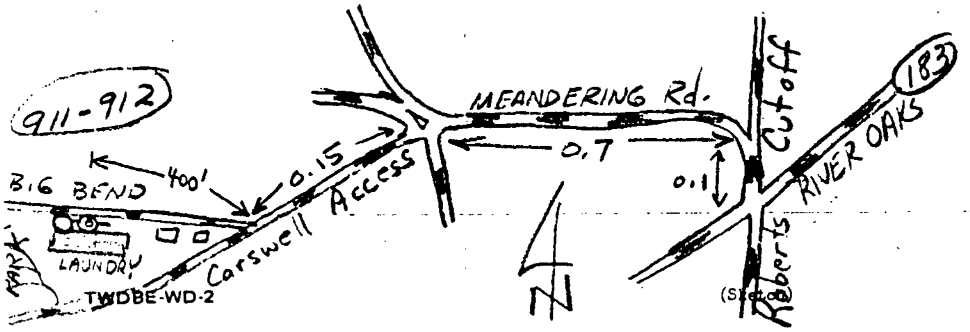
15. Record by: P. Nordstrom Date 6-3 1975

Source of Data obs

16. Remarks: Ft. Worth Laundry & Cleaners and 2 other stores (East Gate Laundromat)

well destroyed - pump blew
#2 drilled next to IT

911-912



TWDBE-WD-2

(Sketch)

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32-13-911

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. ____   State Well No. 32-13-910
Owner's Well No. 2   County TARRANT

1. Location: ___1/4, ___1/4 Sec. ___, Block ___ Survey ___

2. Owner: (b) (6) [redacted]   Address: (b) (6) [redacted]

Tenant: ___   Address: ___

Driller: Ward & Ward Drilling Co.   Address: ___

3. Elevation of LSD is 670 ft. above msl, determined by TOPO

4. Drilled: 4-25 19 72; Dug, Cable Tool, Rotary,

5. Depth: Rept. 334 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Reda   Type SUBm.

No. Stages ___, Bowls Diam. ___ in., Setting 315 ft.

Column Diam. 2 in., Length Tailpipe ___ ft.

8. Motor: Fuel Elec.   Make & Model ___   HP. 5

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est. ___

10. Performance Test: Date ___ Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production ___ gpm   Specific Capacity ___ gpm/ft.

11. Water Level: 260 ft. rept. meas. 5-3 19 72 above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 6-3-75 Laboratory TSDH

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: P. Nordstrom   Date 6-3 1975

Source of Data owner, obs

16. Remarks:

CASING & BLANK PIPE

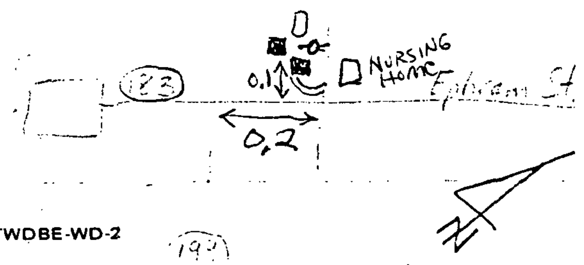
Cemented From 0 ft. to 327 f

Diam. (in.)	Type	Setting, ft. from	to
7	steel	0	3[illegible]

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
7	JET Perf	304	310
7	"	320	325



E-log

109

TWDBE-WD-2   (Sketch)

32-13-910

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-105

State Well No. 32-13-909

Owner's Well No.

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
SKYLINE PLANT

2. Owner: SANSOM PARK Address:
Tenant: Address:
Driller: H. MILLICAN Address:

3. Elevation of LSD is 725 ft. above msl, determined by TOPO

4. Drilled: 1952; Dug, Cable Tool, Rotary,

5. Depth: Rept. 376 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Peerless Type TURBINE
No. Stages 23, Bowls Diam. 6 in., Setting 310 ft.
Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel ELEC Make & Model U.S. MOTORS HP. 15

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

11. Water Level: 248.7 ft. rept. meas. 4-8 1953 above below lsd which is ft. above below surface.
251.0 ft. rept. meas. 11-10 1954 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. — °F, Date sampled for analysis 3-60 Laboratory TSDH
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 4-15 1975
Source of Data B.O. 5709

16. Remarks:

CASING & BLANK PIPE

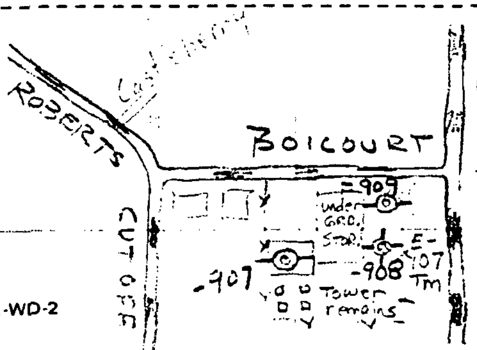
Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
8			
7			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

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32-13-909

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains Field No. E-107 State Well No. 32-13-908

Owner's Well No. County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
SKYLINE PLANT
2. Owner: SANSOM PARK Address:
Tenant: Address:
Driller: T.J. MILLICAN Address:
3. Elevation of LSD is 725 ft. above msl, determined by TOPO
4. Drilled: 1943; Dug, Cable Tool, Rotary,
5. Depth: Rept. 963 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft. NONE
8. Motor: Fuel Make & Model HP.
9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, ft from	to
8			
7			

11. Water Level: 230 ft. rept. 1943 above below which is ft. above below surface.
481.0 ft. meas. 1-26 1957 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, abandoned in 1952
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test.
15. Record by: P. Nordstrom Date 4-15 1975
Source of Data Bulletin 5709
16. Remarks: originally a Glen Rose Limestone Well

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

222 E-105

(Sketch)

111

TWDBE-WD-2

32-13-908

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp　　Field No. E-106　　State Well No. 32-13-907

Owner's Well No. ______　　County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
SKYLINE PLANT in Bldg.
2. Owner: SANSOM PARK　Address: ___
Tenant: ___　Address: ___
Driller: T. J. MILLICAN　Address: ___
3. Elevation of LSD is 720 ft. above msl, determined by TOPO
4. Drilled: 1942; Dug, Cable Tool, Rotary, ___
5. Depth: Rept. 330 ft. Meas. ___ ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ___
7. Pump: Mfgr. Pomona　Type TURB
No. Stages ___, Bowls Diam. ___ in., Setting ___ ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel ELEC　Make & Model F-M　HP. 15
9. Yield: Flow ___ gpm, Pump 84 gpm, Meas. Rept. Est. 3/13/47
10. Performance Test: Date ___ Length of Test ___ Made by ___
Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.
Production ___ gpm　Specific Capacity ___ gpm/ft.
11. Water Level: ___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.
___ ft. rept. meas. ___ 19 ___ above below ___ which is ___ ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, ___
13. Quality: (Remarks on taste, odor, color, etc.) ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
Temp. ___ °F, Date sampled for analysis ___ Laboratory ___
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test, ___
15. Record by: P. NORDSTROM　Date 4-15 1975
Source of Data Bull. 5709, Mr. Millican
16. Remarks: ___

CASING & BLANK PIPE

Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
8			
7			

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to

see E-105

(Sketch)

TWDBE-WD-2

112

32-13-907

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-104   State Well No. 32-13-906

Owner's Well No.   County TARRANT

1. Location: 1/4, 1/4 Sec., Block Survey
Montrose Dr.
2. Owner: Worth Water Co. Address:
Tenant: Address:
Driller: F. Watts Address:
3. Elevation of LSD is 700 ft. above msl, determined by TOPO
4. Drilled: 1944; Dug, Cable Tool, Rotary,
5. Depth: Rept. 340 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
No. Stages, Bowls Diam. in., Setting ft. NONE
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel E Make & Model HP. 10
9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.
11. Water Level: 217.7 ft. rept. meas. 1-3 1950 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, destroyed
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 4-15-1975
Source of Data Bull. 5209, River Oaks
16. Remarks:
Under house now

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

see -905

(Sketch)

TWDBE-WD-2

113

32-13-906

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm

Field No. E-102

Owner's Well No.

State Well No. 32-13-905

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
   Montrose Drive in River Oaks
2. Owner: Worth Water Co. Address:
   Tenant: Address:
   Driller: Ft. Worth Drilling Co. Address:
3. Elevation of is 700 ft. above msl, determined by TOPO
4. Drilled: 19 44; Dug, Cable Tool, Rotary,
5. Depth: Rept. 985 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
   No. Stages , Bowls Diam. in., Setting ft.
   Column Diam. in., Length Tailpipe ft. NONE
8. Motor: Fuel E Make & Model HP. 50
9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
    Static Level ft. Pumping Level ft. Drawdown ft.
    Production gpm Specific Capacity gpm/ft.
11. Water Level: 450 ft. rept. meas. 19 44 above below which is ft. above below surface.
    ft. rept. meas. 19 above below which is ft. above below surface.
    ft. rept. meas. 19 above below which is ft. above below surface.
    ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used destroyed
13. Quality: (Remarks on taste, odor, color, etc.)
    Temp. °F, Date sampled for analysis Laboratory
    Temp. °F, Date sampled for analysis Laboratory
    Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
    Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 4-15 19 75
    Source of Data Bull. 5709, River Oaks
16. Remarks:
    House now on spot where wells were

CASING & BLANK PIPE

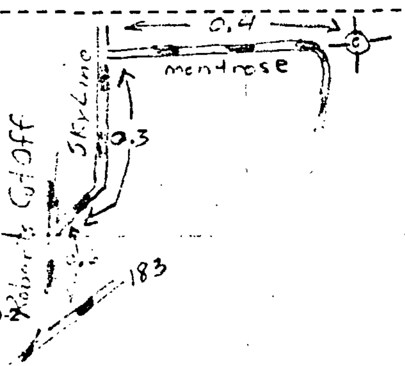
Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
8			
6			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

114

32-13-905

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. E-121   State Well No. 32-13-904

Owner's Well No.   County TARRANT

1. Location 1/4, 1/4 Sec, Block Survey
RIVER OAKS PLANT - Roberts Cut-Off
2. Owner: Texas Water Co. Address:
Tenant: Address:
Driller: -- Address:
3. Elevation of is 610 ft. above msl, determined by TOPO
4. Drilled: 1944; Dug, Cable Tool, Rotary,
5. Depth: Rept. 256 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
No. Stages, Bowls Diam. in., Setting 210 ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel E Make & Model HP. 7 1/2
9. Yield: Flow gpm, Pump 65 gpm, Meas., Rept., Est. 11-54
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

11. Water Level: 141 ft. rept. meas. 9 1946 above below which is ft. above below surface.
151.5 ft. rept. meas. 11-10 1954 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, destroyed
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: R. Nordstrom Date 4-15 1975
Source of Data Bull. 5709, River Oaks
16. Remarks:
well now under shopping center

-902
(Sketch)

TWDBE-WD-2

115

32-13-904

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. E-119

Owner's Well No.

State Well No. 32-13-903

County TARRANT

1. Location: 1/4, 1/4 Sec, Block Survey
River Oaks Plant Roberts Cut-off & 183

2. Owner: Texas Water Co Address:

Tenant: Address:

Driller: H. MILLICAN Address:

3. Elevation of is 610 ft. above msl, determined by TOPO

4. Drilled: Sept 19 46; Dug, Cable Tool, Rotary,

5. Depth: Rept. 320 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T

No. Stages, Bowls Diam. in., Setting ~~250~~ ft. none

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel E Make & Model HP. 20

* 9. Yield: Flow gpm, Pump 83 gpm, Meas. Rept., Est. 12/3/49

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: 140 ft. rept. 9 1946 above which is ft. above surface.
meas. below below
154.3 ft. rept. meas. 1-5 1955 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, destroyed

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 10-49 Laboratory TSDH

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 4-15 1975

Source of Data Bull 5709, River Oaks

16. Remarks:

* Rept. 40 gpm on 11-10-54

well destroyed — under shopping center

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, from	to
10			
8			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

116

-902

TWDBE-WD-2

(Sketch)

32-13-903

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-120   State Well No. 32-13-902

Owner's Well No. 3   County TARRANT

32°46'43"N/97°23'42"W

1. Location: 1/4, 1/4 Sec. , Block Survey
River Oaks Plant   Roberts Cutoff & 183
2. Owner: Texas Water Co.   Address:
Tenant: Address:
Driller: H. MILLICAN   Address:
3. Elevation of is 610 ft. above msl, determined by TOPO
4. Drilled: MAY 19 46; Dug, Cable Tool, Rotary,
5. Depth: Rept. 834 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Pamona Type Turb
No. Stages , Bowls Diam. in., Setting 530 ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel Elec Make & Model ~~75~~ none HP. 75
9. Yield: Flow gpm, Pump 250 gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

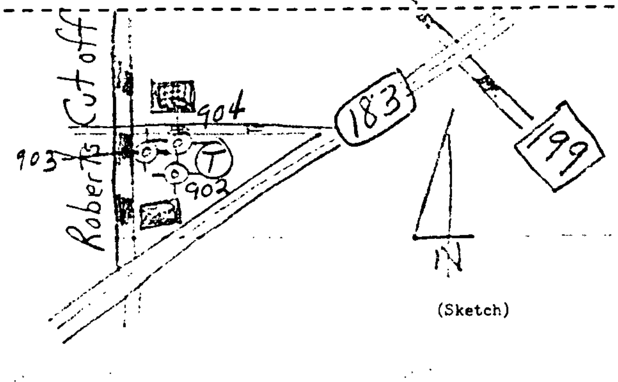
Diam. (in.)	Type	Setting, ft. from	to
10	steel	0	504
8	"	494	768
7	liner	759	834

11. Water Level: 320 ft. rept. meas. 5 1946 above below which is ft. above below surface.
400.05 ft. rept. meas. 5-13 1955 above below lsd which is ft. above below surface.
over
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used destroyed
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. – °F, Date sampled for analysis 6-9-49 Laboratory USGS
Temp. – °F, Date sampled for analysis 7-50 Laboratory TSDH
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 4-15 1975
Source of Data Bull. 5709, River Oaks
16. Remarks: now covered by shopping center

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
7	screen	768	834



(Sketch)

Obs Well

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TWDBE-WD-2

32-13-902

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Paluxy Field No. ____ State Well No. 32-21-217

Owner's Well No. ____ County TARRANT

1. Location: ___1/4, ___1/4 Sec.___, Block ___ Survey ___
3 SW TARRANT CTY CT. HSE. S. part of Condominium
2. Owner: CLINTON WRIGHT 292-2770 Address: 6145 Wedgewood Dr, Ft. Worth
Tenant: ____ Address: ____
Driller: Watts Drilling Co. Address: Box 273-L, Ft. Worth
3. Elevation of ____ is 670 ft. above msl, determined by ____
4. Drilled: 8 19 72; Dug, Cable Tool, Rotary
5. Depth: Rept. 272 ft. Meas. ____ ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Goulds Type Subm.
No. Stages ___, Bowls Diam. ___ in., Setting 231 ft.
Column Diam. ___ in., Length Tailpipe ___ ft.
8. Motor: Fuel ELEC Make & Model ____ HP. 7 1/2
9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est.
10. Performance Test: Date 8-72 Length of Test 2 hr Made by Watts
Static Level 180 ft. Pumping Level 187 ft. Drawdown 7 ft.
Production 50 gpm Specific Capacity 7.14 gpm/ft.
11. Water Level: 180 ft. rept. meas. 8 19 72 above below ____ which is ___ ft. above below surface.
___ ft. rept. meas. 19__ above below ____ which is ___ ft. above below surface.
___ ft. rept. meas. 19__ above below ____ which is ___ ft. above below surface.
___ ft. rept. meas. 19__ above below ____ which is ___ ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind. Irr. Waterflooding, Observation, Not Used,
13. Quality: (Remarks on taste, odor, color, etc.)
Temp.___ °F, Date sampled for analysis ____ Laboratory ____
Temp.___ °F, Date sampled for analysis ____ Laboratory ____
Temp.___ °F, Date sampled for analysis ____ Laboratory ____
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: R. NORDSTROM Date 9-29 1975
Source of Data Mr. Watts
16. Remarks:

CASING & BLANK PIPE

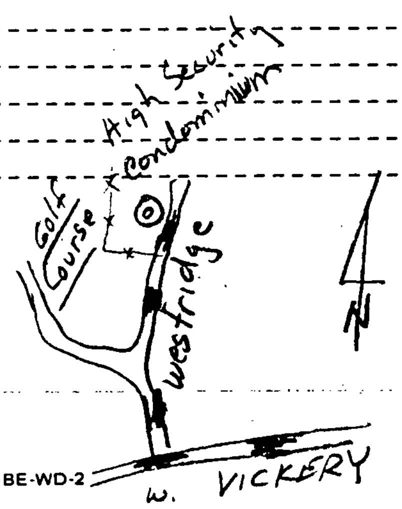
Cemented From 0 ft. to 130 ft.

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	steel	+1	272

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	slotted		



TWDBE-WD-2

(Sketch)

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32-21-217

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp Field No. D-54 State Well No. 32-21-216

Owner's Well No. County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: Western Hills Hotel Address:

Tenant: Address:

Driller: J. Stewart Address:

3. Elevation of LS is 735 ft. above msl, determined by TOPo

4. Drilled: 19 54; Dug, Cable Tool, Rotary,

5. Depth: Rept. 306 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel E Make & Model HP. 10

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to

Diam. (in.)	Type	Setting, ft from	to
10			
7			

11. Water Level: 232.5 ft. rept. meas. 9-14 19 57 above below lsd which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

ft. rept. meas. 19 above below which is ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, destroyed

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

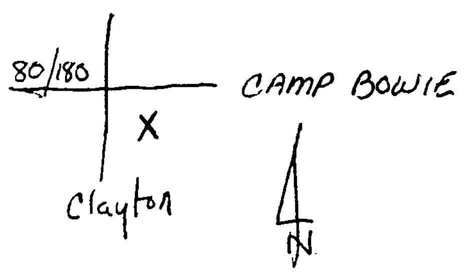
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P.L. NORDSTROM Date 9-18 19 75

Source of Data Bull. 5709, area merchant

16. Remarks:

Hotel burnt down — now Skaggs-Albertson Store on this site



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TWDBE-WD-2 (Sketch)

32-21-216

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp

Field No. D-51

Owner's Well No. 3

State Well No. 32-21-211

County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
Ridglea
2. Owner: TEXAS WATER CO. Address:
Tenant: Address:
Driller: T. J. MILLICAN Address:
3. Elevation of LS is 750 ft. above msl, determined by TOPO
4. Drilled: 1943; Dug, Cable Tool, Rotary,
5. Depth: Rept. 390 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
No. Stages , Bowls Diam. in., Setting 340 ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel E Make & Model HP. 25
9. Yield: Flow gpm, Pump 59 gpm Meas. Rept., Est. 12/2/49
10. Performance Test: Date 2/12/47 Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production 70 gpm Specific Capacity gpm/ft.
11. Water Level: 218 ft. rept. meas. 1943 above below lsd which is ft. above below surface.
251 ft. rept. meas. 11 1954 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test
15. Record by: P. Nordstrom Date 7-29 1975
Source of Data Bull. 5709 Ft. Worth
16. Remarks: deepened from 324' in 1954

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

129

see-201

(Sketch)

TWDBE-WD-2

32-21-211

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. D-50   State Well No. 32-21-210

Owner's Well No. 4   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block , Survey

Ridglea

2. Owner: Texas Water Co.   Address:

Tenant: Address:

Driller: T. J. MILLICAN   Address:

3. Elevation of LS is 740 ft. above msl, determined by TOPO

4. Drilled: 19 43; Dug, Cable Tool, Rotary,

5. Depth: Rept. 380 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type T

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel E Make & Model HP. 25

* 9. Yield: Flow gpm, Pump 88 gpm, Meas, Rept., Est. 12/3/49

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

11. Water Level: 141 ft. rept. 10 1943 below lsd which is ft. above/below surface.

249.1 ft. meas. 2-20 1954 below lsd which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

ft. rept./meas. 19 above/below which is ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: P. Nordstrom Date 7-29 1975

Source of Data Bull. 5709, Ft. Worth

16. Remarks:

* meas. 57 gpm 11/10/54

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

121

see 201

(Sketch)

TWDBE-WD-2

32-21-210

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. D-53   State Well No. 32-21-209
Owner's Well No. 2   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey
Ridglea
2. Owner: Texas Water Co. Address:
Tenant: Address:
Driller: T. J. MILLICAN Address:
3. Elevation of LS is 760 ft. above msl, determined by TOPO
4. Drilled: 19 42; Dug, Cable Tool, Rotary,
5. Depth: Rept. 324 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type T
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel E Make & Model HP. 10
9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.
10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.
11. Water Level: 230 ft. rept. meas. 11 1942 above below lsd which is ft. above below surface.
251 ft. rept. meas. 11 1954 above below lsd which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used plugged
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis 7-50 Laboratory TSDH
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: P. Nordstrom Date 7-29 1975
Source of Data Bull 5709, Ft. Worth
16. Remarks:

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
10			
8			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

122

22-201

(Sketch)

TWDBE-WD-2

32-21-209

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kp   Field No. D-48   State Well No. 32-21-208
Owner's Well No. 9   County TARRANT

1. Location: 1/4, 1/4 Sec. , Block Survey

2. Owner: White Settlement Address:
Tenant: Address:
Driller: J.C. HALL Address:

3. Elevation of LSD is 730 ft. above msl, determined by TOPO

4. Drilled: / 19 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 250 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type Cyl
No. Stages , Bowls Diam. in., Setting ft.
Column Diam. in., Length Tailpipe ft.
NONE

8. Motor: Fuel ELEC Make & Model HP. 1 1/2

9. Yield: Flow gpm, Pump 12 gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by
Static Level ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

11. Water Level: ft. rept./meas. 19 above/below which is ft. above/below surface.
ft. rept./meas. 19 above/below which is ft. above/below surface.
ft. rept./meas. 19 above/below which is ft. above/below surface.
ft. rept./meas. 19 above/below which is ft. above/below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, plugged

13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 2-23 1975
Source of Data Bull. 5709 TWC

16. Remarks:

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
4			
~~10~~			
~~8~~			

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

123

-205
(Sketch)

TWDBE-WD-2

32-21-208

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm

Field No. E-92
Owner's Well No. 6

State Well No. 32-14-712
County TARRANT

1. Location: ____ 1/4, ____ 1/4 Sec. ____, Block ____ Survey ____

2. Owner: Swift & Co. Address:
   Tenant: Address:
   Driller: J. L. MYERS' SONS Address:
3. Elevation of LS is 550 ft. above msl, determined by TOPO
4. Drilled: 8-26 1954; Dug, Cable Tool, Rotary
5. Depth: Rept. 981 ft. Meas. ____ ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. ____ Type T
   No. Stages ____, Bowls Diam. ____ in., Setting ____ ft.
   Column Diam. ____ in., Length Tailpipe ____ ft. none
8. Motor: Fuel E Make & Model ____ HP. 100
9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est.
10. Performance Test: Date ____ Length of Test ____ Made by ____
    Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.
    Production ____ gpm Specific Capacity ____ gpm/ft.

CASING & BLANK PIPE

Cemented From ____ ft. to ____ ft.

Diam. (in.)	Type	Setting, ft. from	Setting, ft. to
18	steel	0	847
13 3/8	Liner	772	981

11. Water Level: ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
    ____ ft. rept. meas. ____ 19__ above below ____ which is ____ ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used.
13. Quality: (Remarks on taste, odor, color, etc.)
    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____
    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____
    Temp. ___ °F, Date sampled for analysis ____ Laboratory ____
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,
15. Record by: RRM Date 7-27 1975
    Source of Data Bull. 5709
16. Remarks:

WELL SCREEN

Screen Openings ____

Diam. (in.)	Type	Setting, ft. from	Setting, ft. to
13 3/8	SS WOP Screen	847	958

124

TWDBE-WD-2

(Sketch)

32-14-712

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-91   State Well No. 32-14-711

Owner's Well No. (5)   County TARRANT

1. Location: ___1/4, ___1/4 Sec.___, Block___ Survey___

2. Owner: Swift & Co.   Address:

Tenant: Address:

Driller: J. L. MYERS' SONS   Address:

3. Elevation of ___ is 550 ft. above msl, determined by

4. Drilled: 12 Feb. 1954; Dug, Cable Tool, Rotary,

* 5. Depth: Rept. 973 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ___ Type T

No. Stages___, Bowls Diam.___ in., Setting___ ft.

Column Diam.___ in., Length Tailpipe___ ft. none

8. Motor: Fuel E   Make & Model   HP.

9. Yield: Flow___ gpm, Pump 345 gpm Meas. Rept., Est. 12/1/54

10. Performance Test: Date 2-15-54 Length of Test 60 hrs. Made by

Static Level 437 ft. Pumping Level 609 ft. Drawdown 172 ft.

Production 50 gpm Specific Capacity 0.3 gpm/ft.

11. Water Level: 437.0 ft. rept. meas. 2-15 1954 above below lsd, which is ___ ft. above below surface.

620.2 ft. rept. meas. 5-22 1954 above below lsd which is ___ ft. above below surface.

683 ft. rept. meas. 11 1954 above below which is ___ ft. above below surface.

(P.L.) 812.2 ft. rept. meas. 12-1 1954 above below lsd which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 2-13-54 Laboratory USGS

Temp.___ °F, Date sampled for analysis___ Laboratory___

Temp.___ °F, Date sampled for analysis___ Laboratory___

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: VHM   Date 7-27 1975

Source of Data Bull. 5709

16. Remarks:

* well deepened from 873' in 5-54

CASING & BLANK PIPE

Cemented From 0 ft. to 885 ft.

Diam. (in.)	Type	Setting, ft. from	to
~~20~~	~~steel~~	~~0~~	~~415~~
18	"	0	885
13	liner	802	973

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
13	screen	885	973

125

TWDBE-WD-2   (Sketch)

32-14-711

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-89   State Well No. 32-14-710

Owner's Well No. (4)   County TARRANT

1. Location: ____1/4, ____1/4 Sec.______, Block ______ Survey ______

2. Owner: Swift & Co.   Address:

Tenant: Address:

Driller: J. L. MYERS' SONS   Address:

3. Elevation of ______ is 550 ft. above msl, determined by ______

4. Drilled: Sept. 19 44; Dug, Cable Tool, Rotary,

5. Depth: Rept. 987 ft. Meas. ______ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ______ Type T

No. Stages ______, Bowls Diam. ____ in., Setting 720 ft.   None

Column Diam. ______ in., Length Tailpipe ______ ft.

8. Motor: Fuel E   Make & Model ______ HP. 10

9. Yield: Flow ____ gpm, Pump ____ gpm, Meas., Rept., Est.

10. Performance Test: Date ______ Length of Test ______ Made by ______

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft.

Production ______ gpm Specific Capacity ______ gpm/ft.

CASING & BLANK PIPE

Cemented From ______ ft. to ______ ft.

Diam. (in.)	Type	Setting, ft. from	to
20	Steel	0	2[illegible]
13 3/8	"	0	45[illegible]
10 3/4	"	450	885
6 5/8	Liner	859	987

11. Water Level: 520 ft. rept. meas. 12 1948 above below ______ which is ____ ft. above below surface.

528 ft. rept. meas. 2 1952 above below ______ which is ____ ft. above below surface.

______ ft. rept. meas. ____ 19__ above below ______ which is ____ ft. above below surface.

______ ft. rept. meas. ____ 19__ above below ______ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. – °F, Date sampled for analysis 6-13-49 Laboratory USGS

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

Temp. ___ °F, Date sampled for analysis ______ Laboratory ______

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test

15. Record by: PKM   Date ______ 19__

Source of Data Bull 5709

16. Remarks:

reworked in 1953

WELL SCREEN

Screen Openings ______

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	WOP screen	885	958

E-log

126

TWDBE-WD-2   (Sketch)

32-14-710

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Ktm   Field No. E-90   State Well No. 32 14 709

Owner's Well No. (3)   County TARRANT

1. Location: ___1/4, ___1/4 Sec.___, Block ___ Survey ___

2. Owner: Swift & Co. Address:

Tenant: Address:

Driller: J. L. MYERS' SONS Address:

3. Elevation of LS is 550 ft. above msl, determined by TOPO

4. Drilled: 15 May 1937; Dug, Cable Tool, Rotary,

5. Depth: Rept. 980 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. ___ Type T

No. Stages ___, Bowls Diam. ___ in., Setting 800 ft. None

Column Diam. ___ in., Length Tailpipe ___ ft.

8. Motor: Fuel E Make & Model ___ HP. 100

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est.

10. Performance Test: Date 7-54 Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level 670 ft. Drawdown ___ ft.

Production 199 gpm Specific Capacity ___ gpm/ft.

11. Water Level: ___ ft. rept. meas. ___ 19__ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ___ which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below ___ which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind, Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test

15. Record by: RHM Date ___ 19__

Source of Data Bull 5709

16. Remarks:

CASING & BLANK PIPE

Cemented From ___ ft. to ___

Diam. (in.)	Type	Setting, from	to
10			

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to

127

TWDBE-WD-2   (Sketch)

32-14-709

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains Field No. E-87 State Well No. 32-14-704

Owner's Well No. 3 County TARRANT

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___
@ f... pump bldg. (#29) SW corner
2. Owner: Armour & Co. Address:
Tenant: Address:
Driller: Address:
3. Elevation of LS is 560 ft. above msl, determined by TOPO
4. Drilled: 1922; Dug, Cable Tool, Rotary,
5. Depth: Rept. 728 ft. Meas. ft.
6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed
7. Pump: Mfgr. Type
No. Stages ___, Bowls Diam. ___ in., Setting ___ ft.
Column Diam. ___ in., Length Tailpipe ___ ft. NONE
8. Motor: Fuel Make & Model HP.
9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est.
10. Performance Test: Date ___ Length of Test ___ Made by
Static Level 230 ft. Pumping Level 460 ft. Drawdown 230 ft.
Production 118 gpm Specific Capacity ___ gpm/ft.
11. Water Level: 453.54 ft. rept. meas. 7-29 1948 above below Top 4" pipe which is 5.0 ft. above below surface.
460.3 ft. rept. meas. 7-22 1949 above below which is 5 ft. above below surface.
452.75 ft. rept. meas. 12-29 1949 above below which is 5 ft. above below surface.
___ ft. rept. meas. ___ 19___ above below which is ___ ft. above below surface.
12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,
13. Quality: (Remarks on taste, odor, color, etc.) HIST
Temp. ___ °F, Date sampled for analysis ___ Laboratory
Temp. ___ °F, Date sampled for analysis ___ Laboratory
Temp. ___ °F, Date sampled for analysis ___ Laboratory
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,
Formation Samples, Pumping Test,
15. Record by: RLM Date 7-24 1975
Source of Data Bull. 5709, USGS
16. Remarks: Wells abandoned ... 1929

CASING & BLANK PIPE

Cemented From ___ ft. to ___

Diam. (in.)	Type	Setting, from	to
6	steel		

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

Armour & Co.
well info on reverse

Ob Well

128

TWDBE-WD-2 (Sketch)

32-14-704

Form GW-1

TEXAS BOARD OF WATER ENGINEERS

GROUND-WATER DIVISION

WELL SCHEDULE

Date ______, 19___ Field No. C-95

Record by CCS Office No. YU 32 14 703

Source of data 1957 Tarrant Co. Rep. 5 plan com

1. Location: County Tarrant
   Map
   Survey
2. Owner: Rosenthal Pkg Co Address
   Tenant Address
   Driller Address
3. Topography:
4. Elevation: 530 ± 5 ft. above/below
5. Type: Dug, drilled, driven, bored, jetted ___ 19___
6. Depth: Rept. 39 ft. Meas. ___ ft.
7. Casing: Diam. ___ in., to ___ in., Type ___
   Depth ___ ft., Finish
8. Chief Aquifer: Al From ___ ft. to ___ ft.
   Others
9. Water level: 5.2 ft. rept./meas. 12/18 1950 above/below which is ___ ft. above/below surface
10. Pump: Type T Capacity ___ gpm
    Power: Kind E Horsepower
11. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept. Est.
    Drawdown 11.1 ft. after 5½ hours pumping 80 gpm 12/18/50
12. Use: Dom., Stock, PS., RR., Ind., Obs. Irr. used 7. wash down
    Adequacy, permanence pens etc
13. Quality:
    Temp. 65 °F Sample Yes/No 12/18/50
14. Log: Yes/No
15. Remarks:
    (this was a law)

12-18-50 USGS
19.01 pretest swl
sp. cap. = 6.8 80 gpm
T = 7,600 S = 0.019

129

32-14-703

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains   Field No. ________   State Well No. 32-22-210

Owner's Well No. 2   County TARRANT

1. Location: ____1/4, ____1/4 Sec. ______, Block ________ Survey ________

2. Owner: GREAT WESTERN FOOD CO. Address: Box 1867 Ft. Worth

Tenant: ________ Address: 1734 E. EL PASO

Driller: J. L. MYERS' SONS Address: Dallas

3. Elevation of LS is 550 ft. above msl, determined by TOPO

4. Drilled: 9-25 1965; Dug, Cable Tool, Rotary, ________

5. Depth: Rept. 1189 ft. Meas. ________ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Johnston Type TURBINE

No. Stages 26, Bowls Diam. 8 in., Setting 810 ft.

Column Diam. 6 in., Length Tailpipe 10 ft.

8. Motor: Fuel ELECTRIC Make & Model Vert. Hollowshaft HP. 100

9. Yield: Flow ____ gpm, Pump 265 gpm, Meas., Rept., Est.

10. Performance Test: Date 9-29-65 Length of Test 26 Made by Myers

Static Level 680 ft. Pumping Level 750 ft. Drawdown 70 ft.

Production 260 gpm Specific Capacity ______ gpm/ft.

CASING & BLANK PIPE

Cemented From 0 ft. to 978 ft.

Diam. (in.)	Type	Setting, ft. from	to
16	Steel	0	11
10 3/4	Steel	+1.5	978
5-1/2	Liner	914	1143

11. Water Level: 680 ft. rept. meas. 9-25 1965 above below ________ which is ____ ft. above below surface.

________ ft. rept. meas. 19__ above below ________ which is ____ ft. above below surface.

________ ft. rept. meas. 19__ above below ________ which is ____ ft. above below surface.

________ ft. rept. meas. 19__ above below ________ which is ____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used, ________

13. Quality: (Remarks on taste, odor, color, etc.) ________

Temp.___ °F, Date sampled for analysis ________ Laboratory ________

Temp.___ °F, Date sampled for analysis ________ Laboratory ________

Temp.___ °F, Date sampled for analysis ________ Laboratory ________

WELL SCREEN

Screen Openings ________

Diam. (in.)	Type	Setting, ft. from	to
5 1/2	S.S. WOP Screen	978	1013
"	"	1018	1046
"	"	1057	1075
"	"	1085	1095

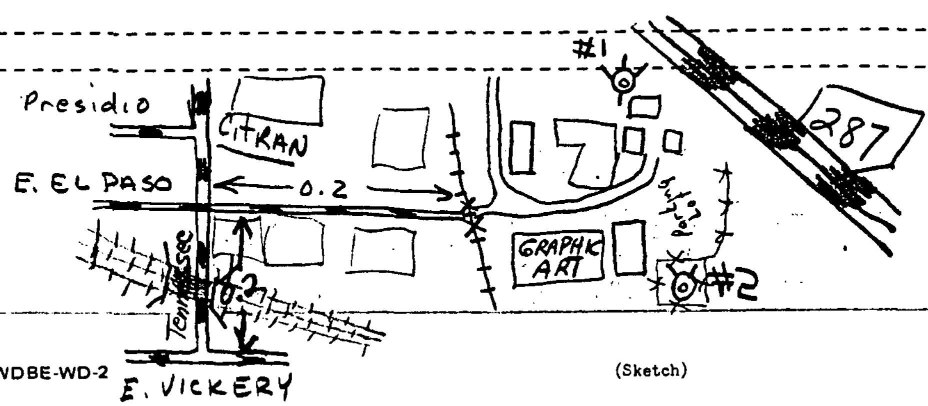
14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log IN CO. FILES

Formation Samples, Pumping Test, ________

15. Record by: P. L. NORDSTROM Date 7-30 1975

Source of Data OBS, MR. LAYMON

16. Remarks: airline @ 812'



TWDBE-WD-2

(Sketch)

13

32-22-210

Reference 14

National Brand
43-571
Made in USA

C.B. "BARRY" ROBISON
VICE PRESIDENT
ENVIRONMENTAL AFFAIRS

McWANE, INC.
P.O. BOX 607
BIRMINGHAM, AL 35201
(205) 322-3521

ATLANTIC STATES, EMPIRE COKE,
McWANE PIPE, PACIFIC STATES,
UNION FOUNDRY, CLOW PIPE, CLOW VALVE,
KENNEDY VALVE & HYDRANT,
M & H VALVE

▷ called on 3/13/97
left message to call

Hair (BOB)

National Brand
43-571
Made in USA

Barry Robibison. 205-322-3521 ← To meet @ site on 10/14/96 S1 3

Charlie Nowlin (205) 991-9888

Access Letter to: Ron Travis
M^c Wayne, Inc.
P.O. Box 43327
Bermingham, AL. 35243

· Clasin ·
- Building Taken Down Site Profil. —
→ Cattle auction leasing ·

→ Power Co. Next Door Property: / PCB cleanup: Some on TVI Has Report

Cell Phone 422-1478
Switch · ↔ (RCL)(#)(STO)
Verify · (RCL)(#)
Activate · (*)(31)(SND) or Call

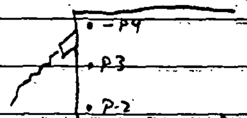
Southeastern Expo. + Livestock Show
(Bob) W.R. (TREY) WATT, III Assistant Gen. Manger - 817-877-2400
← Lease From M^cWayne For Parking.

3

10/16/96 Site Visit

Barry Robison/McWane - Site Rep.
Todd Counter → TNRCC
JD Thompson
8:45 - Began
Met w/ Barry Robison
- Discussed Fill Material Brought in to cover/slope back sides of drum wall.

Photo	Time	
1	0920	Former Baghouse Dust Landfill Location
2	0921	Monitor Well along waste fill location, Approx. 120 ft. from South East C...
3	0924	" " , Appx. 75 ft. "
4	0924	" " , @ Corner of Fill Area.
5.	0925	Drum @ Corner, "wall" of Fill Area.
6	"	South Wall / Covered Drums
7.	0930	Photo of Site Drainage OUTFALL Point #1, South ...
8	0931	View of Drums, East wall above outfall Point
9	0934	" , " 200 Further North of 8
10	0950	View of NE Run-off Sump. SWMU #11
11	1000	View of Western On-site Surface Water Entry Ditch. Ditch goes under facility from west.
12	1000	View of Drums Near West on-site Surface Flow
13	1006	View of Facility, Facing South Towards SE Corner
14	"	" Southeast
15	"	" E/SE
16		Surface Drainage toward SWMU #11 facing EAST
17	1106	View of SITE OUTFALL Point / outfall SWMU #11
18	11:15	> ~~Fisherman on West Fork Trinity~~, Charles Erskine, 1005 6th Ave. Ft. Worth, TX.
19	11:17	Bass + Catfish
20		PPE on Trinity West Fork



OFF SITE WORKER "TARGET" Populations

GRAYBAR ELEC. CO.
5 Full Time Worker
7-5 M-F
8-12 SAT.
City Water.

C.O. Fort Worth / Trans. & Public Works Department.
Street Light + Public Works Div.

~~850~~ 210 people

City of Fort Worth
3 Asphault Plant # 3417 - Directly EAST of TV1
1 Full Time. / 3417 Bryce St.

Double Seat Rings
4
60 people / City Water:

Hernane Wrecking & Lumber Co.
5 12 people
City Water

TU Elec.
Terry Sears
735-3943
# of People

OFF-SITE Cont.

87

▷ Closest Residence 3609 Bryce, Corner of Bryce & Montgom

Bryce Ave Condos

Double Seal Ring

▷ Closest Well – Plugged

Ft Worth Glass & Uphols

2832 Lancaster

335 2341

▷ O All wells ID By State Records Are Plugged

As confirmed 10/16/97

Double Seal Ring
America's Company
MANUFACTURERS OF PISTON RINGS SINCE 1912

DON GREGORY
VICE PRESIDENT / PRODUCTION

2065 MONTGOMERY ST.
FORT WORTH, TX 76107

817-738-6581
FAX 817-732-7831

TIM CLEMENTS
COUNTER SALES REP

GraybaR
ELECTRIC COMPANY, INC.

P.O. BOX 2453
3201 HARLEY AVENUE
FORT WORTH, TX 76107
817 - 335-4523

11

BOTANIC GARDEN
FORT WORTH

RONI CAMPOLI
Events Administrator

3220 Botanic Garden Boulevard
Fort Worth, Texas 76107-3496
Phone (817) 871-7678
Fax (817) 871-7638

City of Fort Worth
Parks & Community Services Department

STATE Designed?

Hearne Wrecking & Lumber Co. Inc.
2111 Montgomery Street
Fort Worth, Texas 76107
PH 817-377-2191 • FAX 817-377-9035

007

Reference 15

RECORD OF COMMUNICATION

Call To: Steve Tacket
Superintendent of Water Systems
City of Fort Worth
(817) 871-8275

Call From: C. Todd Counter
TNRCC

Date of Call: April 2, 1997

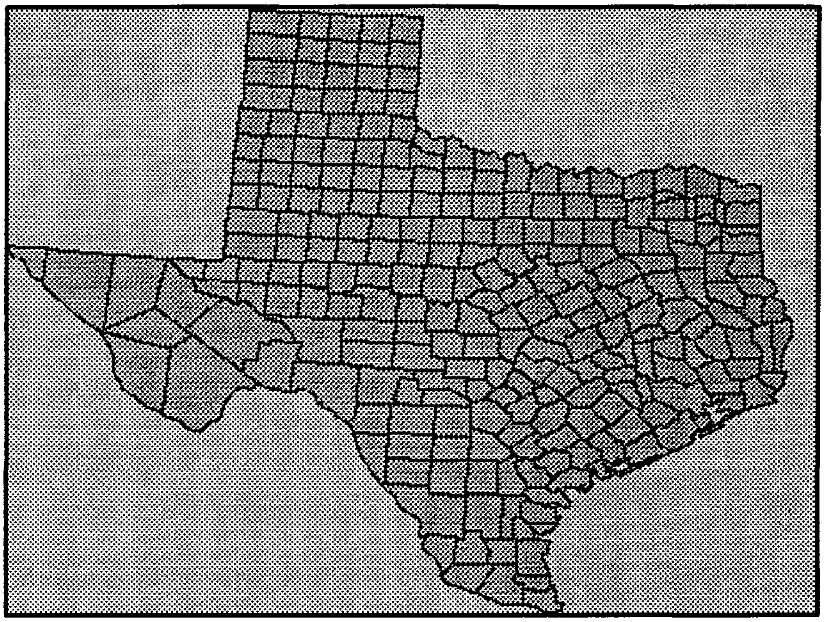
Subject: Public Water Supply - City of Fort Worth

Summary of Communication:

Mr. Tacket stated that the city of Fort Worth public water supply is provided by Lake Worth, Lake Eagle Mountain, and Lake Cedar Creek.

Reference 16

U.S. Census Bureau the Official Statistics



State profile | Congressional Districts | State Data Centers
Federal/State Coop Program for Pop Estimates (FSCPE)

Texas Profiles

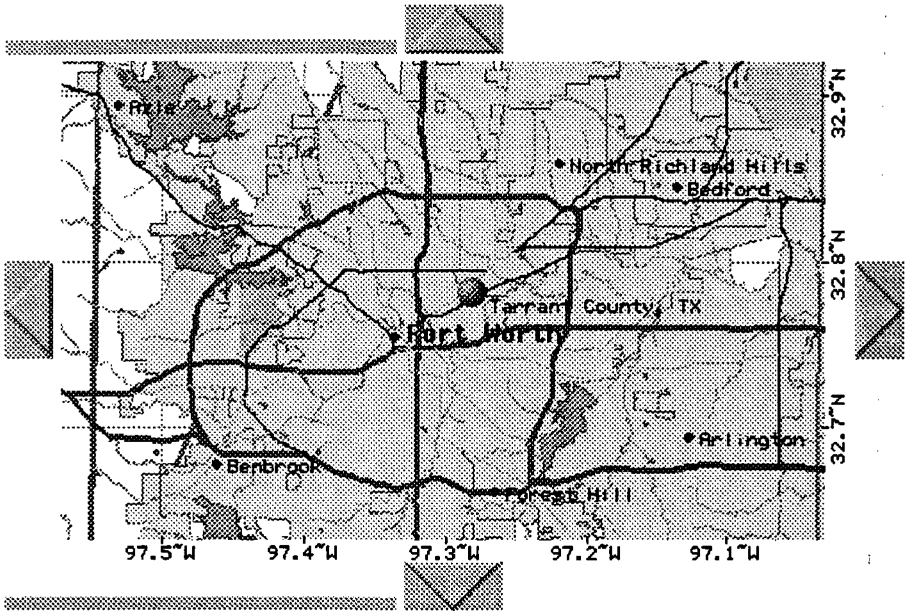
Select a county for your profile
Or view county text files (FIPS code filenames)

USA COUNTIES 1994
Geographic Area: Tarrant, TX (439)
Table: GENERAL PROFILE

POPULATION AND HOUSING (Census)	
Total resident population:	
1992	1,220,119
Per square mile	1,413.0
1990	1,170,103
Percent under 18 years	27.1
Percent 65 years and over	8.3
1980	860,880
Housing, 1990:	
Total units	491,152
Occupied units/households	438,634
Persons per household	2.62
Percent owner occupied	58.1
Median value (dollars)	72,900
EDUCATION (Census)	
Elementary and high school enrollment, 1990	201,771
Percent in public schools	92.2
Persons 25 years and over, 1990	725,554
Percent high school graduates	79.9
Percent college graduates	24.0
MONEY INCOME AND POVERTY (Census)	
Money income, 1989:	
Median household (dollars)	32,335
Per capita (dollars)	15,178
Percent below poverty level, 1989:	
Persons	11.0
Families	8.2
LABOR FORCE (BLS)	
Civilian labor force, 1991	653,732
Unemployment rate	6.6
FEDERAL FUNDS AND GRANTS (Census)	
Total expenditures per capita:	
1992 (dollars)	4,989
1990 (dollars)	5,104
PRIVATE NONFARM ESTABLISHMENTS AND EMPLOYMENT (Census)	
Number of establishments, 1991	28,250
Percent retail trade	24.5
Percent services	36.8
Paid employees, 1991 (pay period including March 12)	449,571
Annual payroll, 1991 ($1,000)	10,029,166

TIGER Map Service

The following map is produced on-the-fly from a special binary version of TIGER/94 data. Technical details are available, as well as instructions on how to include TMS maps in your HTML web pages and CGI programs. The system is load balanced to find the least busy processor (using machine tms2.census.gov which has a run queue length of 2.02) ,maps may take a while to be created. If you have questions, please check out the service FAQ page.



Click on the image to:
Zoom in, factor: (2=features are twice as large)
Zoom out, factor: (2=map covers twice as much area)
Move to new center
Download this map as a GIF file

LEGEND

- Indian Resv
- National Park
- Lake/Pond/Ocean
- City
- Expressway
- County
- Highway
- Connector
- Stream
- Military Area

Scale 1:328424 — 0 2 4 6 8 10 mi / 0 5 10 15 20 km
*average--true scale depends on monitor resolution

Click on the legend to download it as a GIF file.

☐ Search for a particular place (US Gazetteer):
Name: State(optional):

☐ Enter coordinates below to move directly to that location:
Latitude(deg): Longitude(deg):
Width of Map(deg): Height(deg):

003

- ☐ Place a marker on this map: (not passed to future maps)
  Latitude(deg): Longitude(deg):
  Symbol: Label:
  sorry, but no font control yet

- ☐ Or choose from the following preset values:
  Washington, D.C. (default), The Mall, United States, Northeast U.S., New York City.

Please email comments and suggestions to: TMS@Census.GOV.

Return to home page

Brandon Plewe (plewe@acsu.buffalo.edu)
Chris Stuber (cstuber@census.gov)

Tarrant County, TX

- **Tarrant County, TX**
  Population (1990): 1170103
  Location: 32.7704 N, 97.2932 W
  Browse Tiger Map of area.
  Lookup 1990 Census STF1A, STF3A tables.
  1994 USA Counties General Profile
  1994 County Business Patterns Economic Profile
  1993 County Business Patterns Economic Profile

Return to Texas data map
Return to U.S. data map

Please email comments and suggestion toWebMaster@Census.GOV.
Last Revised: *Friday, 06-Sep-96 07:30:43 EDT*

Reference 17

RECORD OF COMMUNICATION

Call To: Mrs. Merleen Mire
Owner - Green Acres Mobile Home Park
(817) 737-7542

Call From: C. Todd Counter
TNRCC

Date of Call: April 2, 1997

Subject: Water Well Confirmation and Population Served.

Summary of Communication:

Mrs. Mire stated that the Green Acres Mobile Home Park has one (1) active well that serves approximately 100 people.

Reference 18

ERN

The State of Texas Water Quality Inventory 94

SURFACE WATER QUALITY MONITORING PROGRAM

12th Edition, 1994 • Prepared Pursuant to Section 305(b) Federal Clean Water Act

Basin Summaries, Basin Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 1 - 12)

2

VOLUME TWO

SFR-11 ◆ 11/94

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

THE STATE OF TEXAS
WATER QUALITY INVENTORY

12th Edition
1994

Prepared Pursuant to
SECTION 305(b)
FEDERAL CLEAN WATER ACT

VOLUME 2

Basin Summaries, Basins Maps, Segment Fact Sheets, and Water Quality Status Tables (Basins 1-12)

by the

Texas Natural Resource Conservation Commission

November 1994

002

NAME: West Fork Trinity River Below Lake Worth

DESCRIPTION: from a point immediately upstream of the confluence of Village Creek in Tarrant County to Lake Worth Dam in Tarrant County

LENGTH/SURFACE AREA: 33 miles (53 kilometers)

SEGMENT CLASSIFICATION: Water Quality Limited SEGMENT RANK: 70
Cause: Advanced Waste Treatment Required
Water Quality Standards Violations

DESIGNATED WATER USES: Contact Recreation
High Quality Aquatic Habitat
Public Water Supply

USE ATTAINABILITY ANALYSIS: None

STATIONS MONITORED IN THE LAST FOUR YEARS ON SEGMENT: 3 OFF SEGMENT: 0

PUBLISHED STUDIES:

29 Apr 1974	Q,F,C,S,B	IMS-57	(Bohmfalk: Jul 1977)
16 Jul 1974	Q,F,C,S,B,I	IMS-57	(Bohmfalk: Jul 1977)

AMBIENT TOXICITY MONITORING STATIONS: None

SUMMARY OF FISH KILLS: None

FISH CONSUMPTION ADVISORIES AND/OR CLOSURES: The Texas Department of Health issued in January 1990 an aquatic life closure, due to elevated levels of chlordane in fish tissue. The area affected is the 22-mile reach from the Clear Fork Trinity River confluence to the lower limit of the segment.

PERMITTED FACILITIES (FINAL):

Domestic	1 outfalls	0.003 MGD
Industrial	8 outfalls	2.14 MGD
Total	9 outfalls	2.14 MGD

SEGMENT SUMMARY:

The contact recreation use is not supported due to elevated fecal coliform bacteria levels. Orthophosphorus is elevated in the lower 11-mile reach. In this same reach, elevated chlordane and PCB concentrations have been observed in fish tissue. Concentrations of various contaminants in sediment exceed screening criteria, including cadmium, lead, silver, and chlordane. The main source of contaminants is urban runoff, principally from the City of Fort Worth.

003

GMENT 806 West Fork Trinity River Below Lake Worth

FIELD MEASUREMENTS AND WATER CHEMISTRY

Parameter	Standards Criteria	Screening Levels	Number of Samples	Number of Detects	Minimum	Maximum	Mean	Number of Values Outside Criteria or Screening Levels	Mean of Values Outside Criteria or Screening Levels	Percent of Values Outside Criteria or Screening Levels
ATER TEMP (C)	33.89		53	53	5.80	34.00	20.68	1	34.0	1.9%
SSOLVED OXYGEN (MG/L)	5.00		53	53	4.90	13.40	9.10	1	4.9	1.9%
(SU)	6.50- 9.00		53	53	7.50	8.40	7.93	0	0.0	0.0%
HLORIDE (MG/L)	100.0		54	54	13.00	47.00	29.41	0	0.0	0.0%
ULFATE (MG/L)	100.0		52	51	1.00	60.00	35.72	0	0.0	0.0%
ONDUCTIVITY FIELD UMHOS			30	30	242.00	627.00	465.20	0	0.0	0.0%
OTAL DISS SOLIDS (MG/L)	500.0		30	30	157.30	407.55	302.38	0	0.0	0.0%
MMONIA (MG/L)		1.00	52	49	0.01	0.61	0.09	0	0.0	0.0%
TRATES&NTRITES (MG/L)		1.00	53	48	0.01	1.00	0.29	0	0.0	0.0%
RTHOPHOS (MG/L)		0.10	30	28	0.01	0.59	0.06	4	0.3	13.33%
OTAL PHOSPHORUS (MG/L)		0.20	52	52	0.02	0.88	0.13	5	0.6	9.62%
HLOROPHYL A (UG/L)		30.00	31	28	1.00	52.20	14.47	3	39.8	10%
ECAL COL (#/100 ML)	400.0		25	25	13.00	10000.00	1623.16	12	3268.6	48%

SEGMENT 806 West Fork Trinity River Below Lake Worth

TOXIC SUBSTANCES IN SEDIMENT

Storet Code	Parameter	Units	Screening Levels	Number of Samples	Number of Detects	Minimum	Maximum	Mean	Number of Values Outside Criterion or Screening Levels
01003	ARSENIC	MG/KG	6.700	10	9	0.050	7.600	2.539	1
01008	BARIUM	MG/KG	190.000	10	10	5.000	92.000	44.990	0
01028	CADMIUM	MG/KG	2.000	10	4	0.100	6.000	1.755	4
01029	CHROMIUM	MG/KG	26.000	10	10	2.000	168.000	35.850	2
01043	COPPER	MG/KG	21.000	10	9	0.100	24.000	9.260	1
01052	LEAD	MG/KG	50.000	11	11	1.000	80.000	46.227	5
01053	MANGANESE	MG/KG	481.000	11	11	61.000	505.000	184.545	1
71921	MERCURY	MG/KG	0.090	10	6	0.010	0.360	0.066	2
01068	NICKEL	MG/KG	18.000	10	8	0.100	18.000	8.620	0
01148	SELENIUM	MG/KG	0.960	10	1	0.100	0.700	0.160	0
01078	SILVER	MG/KG	1.600	10	6	0.100	12.000	2.690	3
01093	ZINC	MG/KG	93.000	11	11	24.000	110.000	52.364	1
39333	ALDRIN	UG/KG	0.500	10	1	0.015	7.040	0.826	1
39076	ALPHA-HEXACHLOROCYCLOHEXANE	UG/KG	0.500	8	0	0.015	0.445	0.116	0
39783	GAMA-HEXACHLOROCYCLOHEXANE	UG/KG	0.500	10	0	0.010	0.400	0.106	0
39102	BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	1197.000	4	0	4.585	13.845	9.913	0
39571	DIAZINON	UG/KG	2.880	11	2	0.265	339.800	35.889	2
39112	DI-N-BUTYL PHTHALATE	UG/KG	505.120	4	2	6.455	1586.020	446.615	1
39351	CHLORDANE	UG/KG	6.000	11	7	0.030	196.330	34.737	6
39363	DDD	UG/KG	3.000	10	0	0.030	0.840	0.246	0
39368	DDE	UG/KG	5.510	10	1	0.025	5.510	0.935	0
39373	DDT	UG/KG	3.000	10	0	0.025	1.205	0.285	0
39383	DIELDRIN	UG/KG	1.000	10	3	0.020	9.040	1.426	2
39393	ENDRIN	UG/KG	1.500	10	0	0.025	2.760	0.450	0
39413	HEPTACHLOR	UG/KG	0.250	10	0	0.015	0.525	0.170	0
39423	HEPTACHLOR EPOXIDE	UG/KG	0.500	10	0	0.020	0.470	0.140	0
39701	HEXACHLOROBENZENE	UG/KG	0.500	8	1	0.015	2.690	0.431	1
39531	MALATHION	UG/KG	2.500	8	0	0.095	6.530	1.264	0

805

39481	METHOXYCHLOR	UG/KG	5.000	10	0	0.045	0.640	0.268	0
39541	PARATHION	UG/KG	1.500	10	0	0.065	2.680	0.515	0
39519	PCBS	UG/KG	10.000	10	1	0.400	13.570	3.362	1
39507	AROCLOR 1254	UG/KG	25.000	0	0	NA	NA	NA	0
39061	PENTACHLOROPHENOL	UG/KG	2.500	8	0	0.010	0.335	0.138	0
39761	SILVEX	UG/KG	5.000	7	0	0.040	0.570	0.250	0
39403	TOXAPHENE	UG/KG	25.000	10	0	0.115	13.575	3.435	0
39731	2,4-D	UG/KG	25.000	7	2	0.170	50.600	8.797	1
39741	2,4,5-T	UG/KG	5.000	7	0	0.040	0.585	0.278	0

SEGMENT 806 West Fork Trinity River Below Lake Worth

TOXIC SUBSTANCES IN TISSUE

Storet Code	Parameter	Units	Screening Levels	Number of Samples	Number of Detects	Minimum	Maximum	Mean	Number of Values Outside Criterion or Screening Levels
34680	ALDRIN	MG/KG	0.1360	3	0	0.0020	0.0020	0.0010	0
39074	ALPHA-HEXACHLOROCYCLOHEXANE	MG/KG	0.3660	0	0	NA	NA	NA	0
34258	BETA-HEXACHLOROCYCLOHEXANE	MG/KG	1.2810	0	0	NA	NA	NA	0
39075	GAMMA-HEXACHLOROCYCLOHEXANE	MG/KG	5.8520	3	0	0.0020	0.0020	0.0010	0
34241	BENZIDINE	MG/KG	0.0003	0	0	NA	NA	NA	0
34682	CHLORDANE	MG/KG	0.3000	3	2	0.0100	1.0000	0.5530	2
81897	DDD	MG/KG	9.6060	3	1	0.0200	0.0400	0.0200	0
81896	DDE	MG/KG	5.4500	3	2	0.1000	0.3000	0.2167	0
39376	DDT	MG/KG	5.2770	3	1	0.0100	0.2300	0.0817	0
39406	DIELDRIN	MG/KG	0.0570	3	1	0.0060	0.0080	0.0047	0
34687	HEPTACHLOR	MG/KG	0.2020	3	0	0.0020	0.0020	0.0010	0
34686	HEPTACHLOR EPOXIDE	MG/KG	0.2530	3	0	0.0040	0.0040	0.0020	0
34688	HEXACHLOROBENZENE	MG/KG	0.6090	3	0	0.0020	0.0020	0.0010	0
34400	HEXACHLOROETHANE	MG/KG	164.6670	0	0	NA	NA	NA	0
71936	LEAD	MG/KG	1.2500	3	0	1.0000	1.7000	0.6167	0
71930	MERCURY	MG/KG	1.0000	3	3	0.1690	0.8300	0.4870	0
34451	NITROBENZENE	MG/KG	8.8670	0	0	NA	NA	NA	0
39515	PCBS	MG/KG	0.1340	3	2	0.0400	2.4000	1.4100	2
39060	PENTACHLOROPHENOL	MG/KG	532.0000	0	0	NA	NA	NA	0
34691	TOXAPHENE	MG/KG	0.8270	3	0	0.1000	0.1000	0.0500	0

SEGMENT 0829 OF THE TRINITY RIVER BASIN

NAME: Clear Fork Trinity River Below Benbrook Lake

DESCRIPTION: from the confluence with the West Fork Trinity River in Tarrant County to Benbrook Dam in Tarrant County

LENGTH/SURFACE AREA: 14 miles (23 kilometers)

SEGMENT CLASSIFICATION: Effluent Limited SEGMENT RANK: 205

DESIGNATED WATER USES: Contact Recreation
High Quality Aquatic Habitat
Public Water Supply

USE ATTAINABILITY ANALYSIS: None

STATIONS MONITORED IN THE LAST FOUR YEARS ON SEGMENT: 2 OFF SEGMENT: 0

PUBLISHED STUDIES: None

AMBIENT TOXICITY MONITORING STATIONS: None

SUMMARY OF FISH KILLS: None

FISH CONSUMPTION ADVISORIES AND/OR CLOSURES: The Texas Department of Health issued in January 1990 a no consumption fish closure for the general population, due to elevated levels of chlordane in fish tissue. The affected reach extends one mile from 7th Street in Fort Worth to the West Fork Trinity River confluence.

PERMITTED FACILITIES (FINAL):

There are no permitted facilities discharging to this segment.

SEGMENT SUMMARY:

The upper half of the segment only partially supports the aquatic life use due to depressed dissolved oxygen levels. Urban runoff is the main contributor of contaminants.

SEGMENT 829 Clear Fork Trinity River Below Benbrook Lake

FIELD MEASUREMENTS AND WATER CHEMISTRY

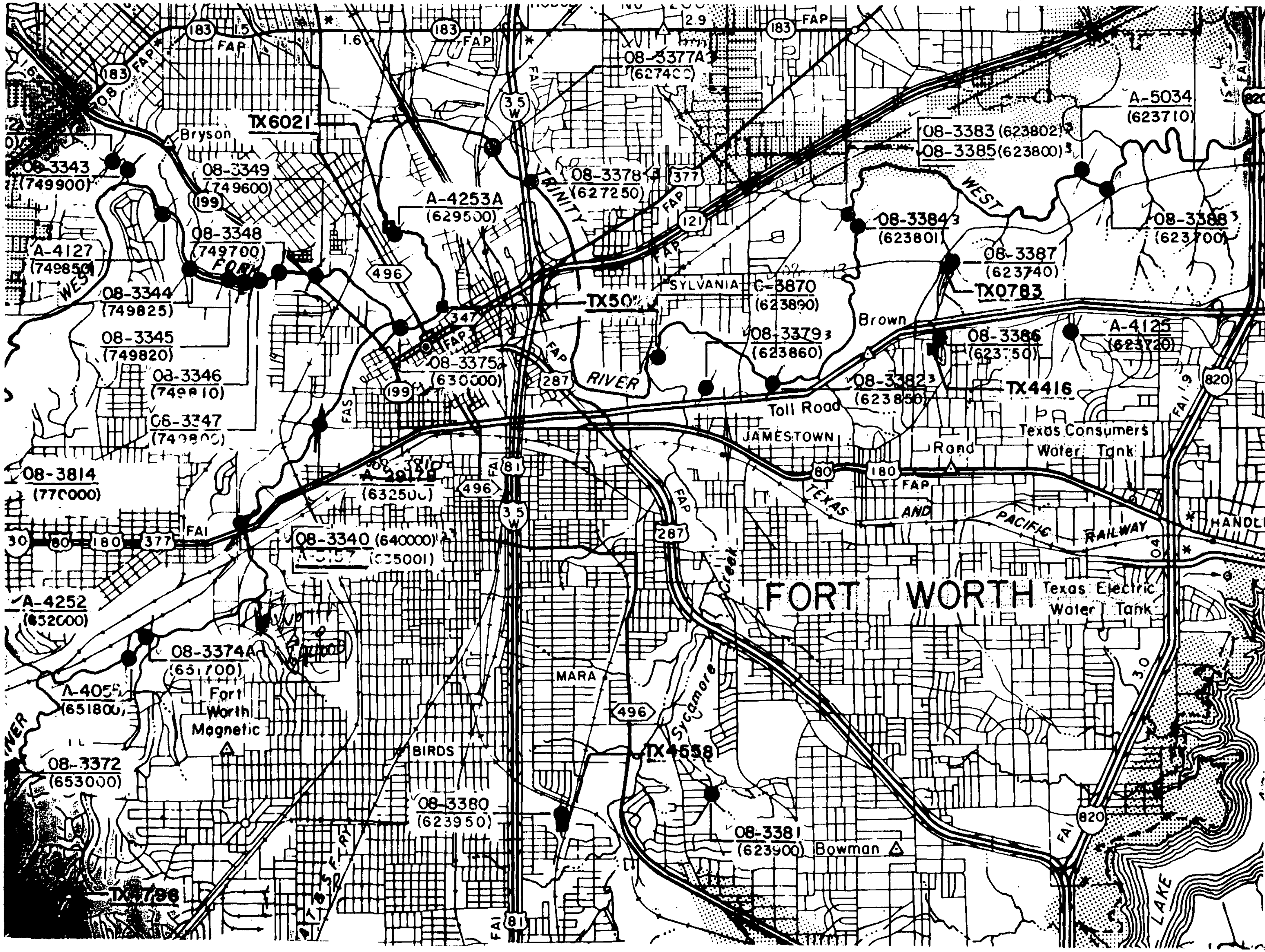
Parameter	Standards Criteria	Screening Levels	Number of Samples	Number of Detects	Minimum	Maximum	Mean	Number of Values Outside Criteria or Screening Levels	Mean of Values Outside Criteria or Screening Levels	Percent of Values Outside Criteria or Screening Levels
WATER TEMP (C)	33.89		12	12	10.50	27.00	19.83	0	0.0	0.0%
DISSOLVED OXYGEN (MG/L)	5.00		12	12	4.70	14.20	8.71	2	4.8	16.7%
PH (SU)	6.50- 9.00		12	12	7.50	8.40	7.90	0	0.0	0.0%
CHLORIDE (MG/L)	100.0		12	12	14.00	40.00	20.75	0	0.0	0.0%
SULFATE (MG/L)	100.0		12	12	3.00	28.00	18.08	0	0.0	0.0%
CONDUCTIVITY FIELD UMHOS			3	3	351.00	491.00	440.67	0	0.0	0.0%
TOTAL DISS SOLIDS (MG/L)	500.0		3	3	228.15	319.15	286.43	0	0.0	0.0%
AMMONIA (MG/L)		1.00	12	12	0.03	5.41	0.85	3	3.0	25.00%
NTRATES&NTRITES (MG/L)		1.00	12	8	0.05	0.41	0.18	0	0.0	0.0%
ORTHOPHOS (MG/L)		0.10	3	3	0.01	0.04	0.03	0	0.0	0.0%
TOTAL PHOSPHORUS (MG/L)		0.20	12	12	0.04	0.42	0.11	2	0.4	16.67%
CHLOROPHYL A (UG/L)		30.00	3	3	3.40	23.00	11.93	0	0.0	0.0%
FECAL COL (#/100 ML)	400.0		3	3	26.00	250.00	124.33	0	0.0	0.0%

SEGMENT 829 Clear Fork Trinity River Below Benbrook Lake

TOXIC SUBSTANCES IN WATER

Storet Code	Parameter ug/L	Fresh Acute Criteria	Fresh Chronic Criteria	Number of Samples	Number of Detects	Minimum	Maximum	Mean	Number of Values Outside Acute Criteria	Mean Exceeds Chronic Criteria
01106	ALUMINUM	991.000	None	0	NA	NA	NA	NA	NA	NA
01000	ARSENIC	360.000	190.000	9	7	0.500	6.000	3.444	0	NO
01025	CADMIUM	32.175	1.098	9	1	0.500	2.000	0.667	0	NO
01220	CHROMIUM, HEXAVALENT	16.000	11.000	0	NA	NA	NA	NA	NA	NO
01040	COPPER	18.470	12.357	9	0	5.000	5.000	5.000	0	NO
01049	LEAD	77.511	3.020	9	0	1.510	1.510	1.510	0	NO
71890	MERCURY	2.400	1.300	9	4	0.050	0.200	0.094	0	NO
01065	NICKEL	1370.100	152.313	9	0	5.000	5.000	5.000	0	NO
01145	SELENIUM	20.000	5.000	9	0	0.500	0.500	0.500	0	NO
01090	ZINC	113.043	102.388	9	5	1.500	10.000	4.778	0	NO
39330	ALDRIN	3.000	None	0	NA	NA	NA	NA	NA	NA
39350	CHLORDANE	2.400	0.004	0	NA	NA	NA	NA	NA	NO
39370	DDT	1.100	0.001	0	NA	NA	NA	NA	NA	NO
39380	DIELDRIN	2.500	0.002	0	NA	NA	NA	NA	NA	NO
39388	ENDOSULFAN	0.220	0.056	0	NA	NA	NA	NA	NA	NO
39390	ENDRIN	0.180	0.002	0	NA	NA	NA	NA	NA	NO
39782	GAMMA-HEXACHLOROCYCLOHEXANE	2.000	0.080	0	NA	NA	NA	NA	NA	NO
39410	HEPTACHLOR	0.520	0.004	0	NA	NA	NA	NA	NA	NO
39530	MALATHION	None	0.010	0	NA	NA	NA	NA	NA	NO
39480	METHOXYCHLOR	None	0.030	0	NA	NA	NA	NA	NA	NO
39755	MIREX	None	0.001	0	NA	NA	NA	NA	NA	NO
39540	PARATHION	0.065	0.013	0	NA	NA	NA	NA	NA	NO
39516	PCBS	2.000	0.014	0	NA	NA	NA	NA	NA	NO
39032	PENTACHLOROPHENOL	12.262	7.741	0	NA	NA	NA	NA	NA	NO
39400	TOXAPHENE	0.780	0.000	0	NA	NA	NA	NA	NA	NO
39740	2,4,5-T	136.000	64.000	0	NA	NA	NA	NA	NA	NO

Reference 19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TRINITY
RIVER
WEST
FORK
TEXAS AND PACIFIC RAILWAY
Sycamore Creek
LAKE
FAP
FAI
FAS
HANDLEY

TYPE OF WATER USES

1.	MUNICIPAL/DOMESTIC	6.	NAVIGATION
2.	INDUSTRIAL	7.	RECREATION
3.	IRRIGATION	8.	OTHER
4.	MINING	9.	RECHARGE
5.	HYDROELECTRIC		

TYPE OF WATER RIGHTS

1 - APPLICATION/PERMIT
2 - CLAIM
3 - CERTIFIED FILING
5 - DISMISSED/REJECTED
6 - CERTIFICATION OF ADJUDICATION
9 - CONTRACTUAL PERMIT/AGREEMENT

STATUS OF WATER RIGHTS

A - ADJUDICATED
P - PARTIALLY CANCELLED
R - DISMISSED/REJECTED
T - TOTALLY CANCELLED

TERM STATUS

A - SPECIFIC DATE
B - NO SPECIFIC DATE
C - PERMIT TO BE REDUCED IF AWARDED A RIGHT UNDER CLAIM
D - NOT AUTHORIZED TO USE UNTIL AMENDED

BASIN CODES

1.	CANADIAN	13.	BRAZOS-COLORADO
2.	RED	14.	COLORADO
3.	SULPHUR	15.	COLORADO-LAVACA
4.	CYPRESS	16.	LAVACA
5.	SABINE	17.	LAVACA-GUADALUPE
6.	NECHES	18.	GUADALUPE
7.	NECHES-TRINITY	19.	SAN ANTONIO
8.	TRINITY	20.	SAN ANTONIO-NUECES
9.	TRINITY-SAN JACINTO	21.	NUECES
10.	SAN JACINTO	22.	NUECES-RIO GRANDE
11.	SAN JACINTO-BRAZOS	23.	RIO GRANDE
12.	BRAZOS		

Texas Natural Resource Conservation Commission

Computer Center -- Xpress Print

REPORT DESCRIPTION

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ACCOUNT NUMBER - WR05P001

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PARTNAME -

PARTNUMBER - 00

DATE - 07/26/94

TIME - 15:50:49

DEVICE - X4050

FORMAT - FL2

QUEUE - L2

BIN - OEDIT3

DELIVER TO

GENERAL HIGHWAY MAP

TARRANT COUNTY

TEXAS

PREPARED BY THE

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

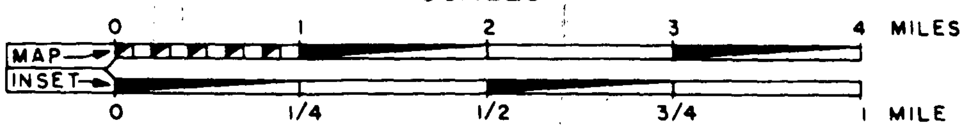
TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALES



1963

1970 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1976

POLYCONIC PROJECTION NORTH AMERICAN DATUM

Control: U. S. Coast and Geodetic Survey and U. S. Geological Survey supplemented by U. S. Engineer's surveys, railroad alignments, state highway alignments and road inventory. Lateral roads and drainage plotted from aerial photographs.

Compiled: 1954 Field checked: 1963 Photographs: 1942-64

004

Sheet 1 of 1 base and 7 supp

Cancel Status	WR Number	Type	Basin	County	River Order Number	Permit	Name of Owner	Stream	Use	Amt Ac-Ft/Yr	Acreage	Priority Date	Res Cap in Ac-Ft	Date Issued
	003387	6	8	220	6237400000		SUNRISE PARK DEV CORP	UNNAMED	7			19770124	99	1985040
	003388	6	8	220	6237000000		WOODHAVEN GOLF CLUB, INC.	UNNAMED	3	200	132	19700427	30	1985040
	003389	6	8	126	6160000000		MOUNTAIN VALLEY COUNTRY CLUB	UNNAMED	7			19790611	218	1985040
	003390	6	8	220	6130000000		[redacted]	VILLAGE CR	3	4	2	19650731	9	1985040
	003391	6	8	220	6100000000		CITY OF ARLINGTON	VILLAGE CR	1	9000		19140624	45710	1985040
	003391	6	8	220	6100000000		CITY OF ARLINGTON	VILLAGE CR	1	4000		19821213		1985040
	003391	6	8	220	5900010000		TEXAS UTILITIES ELECTRIC CO	VILLAGE CR	2	400		19190624		1985040
	003391	6	8	220	5900010000		TEXAS UTILITIES ELECTRIC CO	VILLAGE CR	2	3600		19540602		1958040
	003391	6	8	220	5900010000		TEXAS UTILITIES SERVICES CO	VILLAGE	2	6120		19550912		1985040
	003392	1	23	189	9251100000	003092	[redacted]	ALAMITO CREEK	3	100	100	19700112		1975040
	003392	6	8	220	5838000000		RUSH SPRINGS HOMEOWNERS ASSO	UNNAMED	7			19781002		1985040
	003393	1	23	189	8961000000	003112	[redacted]	RIO GRANDE	3	156	39	19750210		197505
	003393	6	8	220	5830000000		SHADY VALLEY MANAGEMENT CORP	UNNAMED	3	194	90	19600630	25	198504
	003394	6	8	220	5825000000		LAKEWOOD ADDITION HOMEOWNERS	UNNAMED	7			19790221	57	198504
A	003395	6	8	220	5820000000		LAKE INTERLOCHEN HOMEOWER ET	RUSH CR	7			19711129	148	198504
	003396	6	8	220	5819500000		MILLBROOK ADDITION HOMEOWNER	UNNAMED	7			19711231		198504
	003397	6	8	220	5818000000		[redacted]	UNNAMED	7			19780515	34	198504
	003398	6	8	220	5800000000		[redacted]	W FK TRINITY	3	50	25	19411231		198504
	003399	6	8	220	5599900000		GREAT SOUTHWEST GOLF CLUB I	JOHNSON CREEK	3	42	80	19771031	65	198504
	003400	6	8	070	5530000000		TEXAS INDUSTRIES INC	SUTTON BR	3	9	3	19610104		198504
	003400	6	8	070	5530000000		TEXAS INDUSTRIES	SUTTON BRANCH	2	144		19610104		198504
	003401	6	8	070	5525000000		[redacted]	WARD BRANCH	7			19600823	327	198504
	003402	1	23	022	8700010000	003113	[redacted]	MARAVILLAS CR	3	200	100	19750224		197505
	003402	6	8	070	5475000000		NORTH TEXAS CEMENT CO	BEDFORD BRANCH	2	82	50	19641215	270	198504
	003403	6	8	220	5462000000		WALNUT CREEK MANAGEMENT CORP	UNNAMED	7			19750106	43	198504
	003404	1	23	022	8729600000	003153	[redacted]	ASH CREEK	3	13	20	19750303		197507
B	003404	6	8	057	5450000000		TRINITY RIVER AUTHORITY	MOUNTAIN CR	1	15879		19760120	176900	198504
B	003404	6	8	057	5450000000		TRINITY RIVER AUTHORITY	MOUNTAIN CREEK	3	1121		19760120		198504
	003405	1	23	022	8736000000	003144	[redacted]	MARAVILLAS CR	3	400	200	19750303		197507
	003405	6	8	220	5430500000		JOHNSON & JOHNSON MEDICAL, I	UNNAMED	7			19781030	27	1985040
	003406	6	8	057	5430000000		COBBLESTONE GOLF GROUP, INC	FISH CREEK	3	100	80	19780814	2	1985040
	003407	6	8	057	5402000000		[redacted]	O'GUINN BR	3	1	4	19631231	4	1985040
	003408	6	8	057	5400000000		TEXAS UTILITIES ELECTRIC CO	MOUNTAIN CR	2	6400		19290312	22840	198504
	003409	6	8	249	8125100000		[redacted]	W FK TRINITY	3	48	35	19621231		198504
	003410	6	8	126	6160010000		UNITED FEDERAL SAVINGS & LOA	UNNAMED	7			19790611	24	198504
	003411	6	12	135	5814000000		[redacted]	UNNAMED	3	75	150	19780130		198502
	003412	6	12	135	5813000000		[redacted]	UNNAMED	1			19770328	248	198502
	003413	6	12	138	5811000000		[redacted]	WILD HORSE CR	3	182	144	19570831	100	198502
	003414	6	12	138	5810000000		CITY OF BENJAMIN	DUTCHMAN CR	1	34		19290102	915	198502
	003415	6	13	045	4695000000		[redacted]	SAN BERNARD	3	11	5	19640531		198502
	003415	6	13	045	4695000000		[redacted]	SAN BERNARD	3	14	5	19640531		198502
	003416	6	13	045	4684600000		[redacted]	UNNAMED	3	150	150	19800714		198502
	003417	1	14	058	8626000000	003122	CITY OF LAMESA	SULPHUR SPRNGS	3	918	375	19750324	202	197505
	003417	6	13	045	4684500000		[redacted]	MIDDLE BERNARD	3	150	150	19800714		198502
	003418	6	13	241	4684010000		[redacted]	MIDDLE BERNARD	3	110	350	19101231	10	198502
	003418	6	13	241	4684010000		[redacted]	MIDDLE BERNARD	3	1010		19790507		198502
	003418	6	13	241	4684010000		[redacted]	MIDDLE BERNARD	3	480	150	19790507		198502
	003419	6	13	241	4683950000		[redacted]	MIDDLE BERNARD	3	800	200	19790507	10	198502
	003420	6	13	241	4677000000		[redacted]	UNNAMED	3	300	230	19790910	300	198502
	003421	6	13	241	4645000000		TEXAS GULF INC	SAN BERNARD	4	20000		19280913	2152	198502
	003422	6	13	020	4630000000		[redacted]	SAN BERNARD	3	2200	750	19490316		198502
	003422	6	13	020	4630000000		[redacted]	SAN BERNARD	3	425		19520225		198502
	003423	6	13	020	4620000000		PHILLIPS PETROLEUM CO	SAN BERNARD	2	25802		19560404	9327	198502

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Cancel Status	WR Number		Type	Basin	County	River Order Number	Permit	Name of Owner	Stream	Use	Amt Ac-Ft/Yr	Acreage	Priority Date	Res Cap in Ac-Ft	Date Issued
	003340		6	8	220	6400000000		CITY OF FORT WORTH	CL FK TRINITY	1	1791		19140627		19850405
	003340		6	8	220	6400000000		CITY OF FORT WORTH	W FK TRINITY	2	1000		19140627		19850405
	003340		6	8	220	6400000000		CITY OF FORT WORTH	W FK TRINITY	3	145	135	19140627		19850405
	003340		6	8	220	6400000000		CITY OF FORT WORTH	CL FK TRINITY	3	425		19140627		19850405
	003341		6	8	220	7825000000		U S DEPT AIR FORCE	UNNAMED	3	212	86	19600530	3	19850405
	003342		1	14	042	4595990000	003061	CITY OF SANTA ANNA	UNNAMED OF MUD	1	75		19750113	703	19750311
	003342		6	8	220	7550000000		[redacted]	UNNAMED	3	8	4	19370430		19850405
	003343		6	8	220	7499000000		[redacted]	W FK TRINITY	3	28	20	19141231		19850405
	003344		6	8	220	7498250000		MT OLIVET CEMETERY ASSOC	UNNAMED	3	180	86	19201231	1	19850405
	003345		6	8	220	7498200000		[redacted]	W FK TRINITY	3	16	8	19271130		19850405
	003346		6	8	220	7498100000		[redacted]	W FK TRINITY	3	10	5	19270531		19850405
	003347		6	8	220	7498000000		[redacted]	W FK TRINITY	3	8	4	19261231		19850405
	003348		6	8	220	7497000000		[redacted]	W FK TRINITY	3	5	3	19271231		19850405
	003349		6	8	220	7496000000		[redacted]	W FK TRINITY	3	7	5	19270630		19850405
	003351		6	8	184	7490000000		[redacted]	STRICKLAND CR	3	12	23	19550531	7	19850405
	003355		6	8	184	7350000000		[redacted]	GREEN BR	3	108	108	19520526	248	19850405
	003355		6	8	184	7350000000		[redacted]	GREEN BR	3	58	58	19590408		19850405
	003356		6	8	184	7300000000		CITY OF WEATHERFORD	C FK TRINITY	1	4500		19540816	19470	19850405
	003356		6	8	184	7300000000		CITY OF WEATHERFORD	C FK TRINITY	2	60000	600	19540816		19850405
	003356		6	8	184	7300000000		CITY OF WEATHERFORD	C FK TRINITY	3	120		19691201		19850405
	003357		6	8	184	7286000000		GENERAL DYNAMICS REC ASSOC	SQUAW CR	3	200	150	19700706	270	19850405
	003358		6	8	184	7200000000		CITY OF WEATHERFORD	TOWN CREEK	1	530		19520609	530	19850405
	003359		6	8	184	6850000000		TEXAS PYTHIAN HOME INC	TOWN CREEK	3	13	14	19091231		19850405
	003360		6	8	184	6848000000		[redacted]	TOWN CREEK	3	13	10	19660630		19850405
	003361		6	8	184	6835000000		[redacted]	BURGESS CR	1			19631114	238	19850405
	003362		6	8	184	6832000000		CANYON OAKS VENTURE	RUFE EVANS HOL	3	100	47	19811207	470	19850405
	003363		6	8	184	6800000000		MONTEX DRILLING COMPANY	TURKEY CR	7			19531102	1241	19850405
	003364		6	8	126	6710000000		MUSTANG CREEK RANCH	UNNAMED	3	183	204	19630531	70	19850405
	003365		6	8	220	6610000000		BENBROOK WATER & SEWER AUTH	C FK TRINITY	1	725		19710301	7250	19850405
	003365		6	8	220	6610000000		BENBROOK WATER & SEWER AUTH	C FK TRINITY	1	921		19790312	9210	19850405
	003366		6	8	220	6350000000		CITY OF FORT WORTH	C FK TRINITY	1	725		19590518	7250	19850405
	003367		6	8	220	6600000000		[redacted]	C FK TRINITY	7			19110911	15	19850405
	003368		6	8	220	6590100000		EAGLE GOLF I, LTD	UNNAMED	3	10	100	19771219	47	19850405
	003369	A	1	23	022	8729260000	003133A	NEVILLE RANCH	CALAMITY CREEK	3	18	9	19750624		19750624
	003369	A	1	23	022	8729260000	003133A	[redacted]	CALAMITY CREEK	3	162	60	19750120	9	19750624
	003369		6	8	220	6590000000		[redacted]	S MARYS CR	3	10	10	19580630		19850405
	003370		6	8	220	6580000000		INTERIM INC	UNNAMED	7			19781127		19850405
	003371		6	8	220	6555000000		RIDGEWOOD DEVELOPMENT CO	UNNAMED	7			19781211	3	19850405
	003372		6	8	220	6530000000		CITY OF FORT WORTH	C FK TRINITY	7			19770829	12	19850405
	003373		6	8	220	6525000000		GIBRALTER SAVINGS ASSOC	WILLOW CR	7			19770926	27	19850405
	003374	A	6	8	220	6517000000		COLONIAL COUNTRY CLUB	C FK TRINITY	3	292	146	19791001	11	19850405
	003375		6	8	220	6300000000		TEXAS UTILITIES ELECTRIC CO	W FK TRINITY	2	11210	1121	19140629	673	19850405
	003376	A	6	8	220	6279500000		LAFARGE CORPORATION	CEMENT CR	2	2500	650	19740121	128	19850405
	003377	A	6	8	220	6274000000		MOUNT OLIVET CEMETERY ASSOC	W FK TRINITY	3	75	100	19790103	3	19850405
	003378		6	8	220	6272500000		[redacted]	W FK TRINITY	3	50	25	19360331		19850405
	003379		6	8	220	6238600000		[redacted]	W FK TRINITY	3	64	32	19310430		19850405
	003380		6	8	220	6239500000		TARRANT COUNTY	UNNAMED	7			19761129	36	19850405
	003381		6	8	220	6239000000		GLEN GARDEN GOLF & COUNTRY C	UNNAMED	7			19790205	15	19850405
	003382		6	8	220	6238500000		CITY OF FORT WORTH	W FK TRINITY	3	10	20	19300630		19850405
	003383		6	8	220	6238020000		[redacted]	W FK TRINITY	3	6	3	19290430		19850405
	003384		6	8	220	6238010000		[redacted]	W FK TRINITY	3	8	4	19290430		19850405
	003385		6	8	220	6238000000		[redacted]	W FK TRINITY	3	10	5	19290430		19850405
	003386		6	8	220	6237500000		CITY OF FORT WORTH	UNNAMED	7			19760920		19850405

Cancel Status	WR Number	Type	Basin	County	River Order Number	Permit	Name of Owner	Stream	Use	Amt Ac-Ft/Yr	Acreage	Priority Date	Res Cap in Ac-Ft	Date Issued
	003302	6	6	037	7000000000		[redacted]	MALL CREEK	7			19521210	345	19850207
	003302	6	6	037	7000000000		RUSK, CITY OF	MALL CREEK	7			19521210	345	19850207
	003303	1	14	025	4423050000	003151	BROWNWOOD COUNTRY CLUB INC	SO WILLIS CR	7	100		19741125	100	19750715
	003303	6	6	037	6915000000		[redacted]	BOWLES CREEK	3	20	30	19690724		19850207
	003304	6	6	037	6900000000		ARRINGTON SAWMILL, INC.	UNNAMED TRIB	7			19750120	969	19850207
	003305	6	6	113	6886850000		TEMPLE-INLAND FOREST PROD CO	CONNER CREEK	7			19751201		19850207
	003306	6	6	113	6875000000		[redacted]	LEE CREEK	7			19001231	400	19850207
	003307	6	8	119	9030000000		[redacted]	UNNAMED	3	50	25	19581124	168	19850405
	003308	6	8	119	9000000000			E FK CROOKED C	8			19510509	327	19850405
	003309	6	8	119	8950000000			UNNAMED	8			19510504	115	19850405
	003310	6	8	119	9010000000			N FK CROOKED C	8			19510504	594	19850405
	003311	6	8	119	8699500000			LTL CLEVELAND	8			19510521	467	19850405
	003312	6	8	119	8650000000			UNNAMED	1			19770124	280	19850405
	003313	1	23	253	2175520000	003029		JAVALIN CREEK	3	140	125	19741209	140	19750129
	003313 A	6	8	119	8600000000		CITY OF JACKSBORO	LOST CREEK	1	1397		19490318	2129	19850405
	003313 A	6	8	119	8600000000		CITY OF JACKSBORO	LOST CREEK	3	200		19770425	11961	19850405
	003314	1	23	115	9631010000	003041	[redacted]	RIO GRANDE	3	1017	339	19741209		19750219
	003314	6	8	119	8450000000			BRIAR BRANCH	8			19480703	328	19850405
	003315	6	8	249	8235000000		GIFFORD-HILL AND COMPANY INC	UNNAMED	4	177		19640309	305	19850405
	003316	1	14	114	8605000000	003036	[redacted]	GUTHRIE DRAW	3	25	25	19741209	96	19750207
	003316	6	8	249	8241300000		PIONEER CONCRETE OF TEXAS IN	VILLAGE CR	4	345	69	19730917	139	19850405
	003316	6	8	249	8241300000		PIONEER CONCRETE OF TEXAS IN	VILLAGE CR	4	1505		19751222		19850405
	003317	6	8	249	8241000000		[redacted]	VILLAGE CR	3	49	49	19651231		19850405
	003318 A	6	8	249	8235510000		[redacted] TEXAS IN	DRY CREEK	4	510		19191231	936	19850405
	003319	6	8	169	8203000000		[redacted]	UNNAMED	3	5	14	19671231		19850405
	003320	6	8	169	8200000000		CITY OF BOWIE	BIG SANDY CR	1	3500		19540712	20000	19850405
	003320	6	8	169	8200000000		CITY OF BOWIE	BIG SANDY CR	4	200		19540819		19850405
	003320	6	8	169	8200000000		CITY OF BOWIE	BIG SANDY CR	2	1300		19540819		19850405
	003321	6	8	169	8200100000		NORTHWEST TEXAS COUNCIL-BOY	KIEL CR	1	6		19810202		19850405
	003321	6	8	169	8200100000		NORTHWEST TEXAS COUNCIL-BOY	KIEL CR	7			19670626	266	19850405
	003322	6	8	169	8195500000		[redacted]	BIG SANDY CR	3	9	40	19671231		19850405
	003323	1	14	042	4642150000	003158		INDIAN CR	3	90	98	19741209	90	19750730
	003323	6	8	169	8190000000			RED OAK CR	3	10	10	19650531		19850405
	003323	6	8	169	8190000000			RED OAK CR	3	15	15	19661231		19850405
	003325	6	8	249	8176000000			BIG SANDY CR	3	62	117	19650731		19850405
	003326 A	1	23	022	8770000000	003033		PENA CREEK	3	80	40	19741216	10	19750205
	003326 A	1	23	022	8770000000	003033		PENA CREEK	7	20		19741216		19750205
	003326	6	8	249	8175000000			BIG SANDY CR	3	90	90	19601231		19850405
	003327	1	23	022	8761010000	003034		REYNOLDS CR	3	450	400	19741216		19750205
	003327	6	8	249	8170000000			BIG SANDY CR	3	104	100	19670430		19850405
	003328	6	8	249	8160000000			CENTER CR	3	20	20	19750804		19850405
	003329	6	8	249	8129100000			UPPER GARRETT	3	68	45	19690825		19850405
	003330	6	8	249	8129200000			LOLLY CR	3	43	85	19651231		19850405
	003331	6	8	249	8129000000			W FK TRINITY	3	249	175	19640930		19850405
	003332	6	8	249	8127000000			W FK TRINITY	3	4	21	19551231		19850405
	003333	6	8	249	8126000000			W FK TRINITY	3	291	97	19441130		19850405
	003334	6	8	249	8125000000			W FK TRINITY	3	56	42	19621231		19850405
	003335	6	8	249	8124900000			W FK TRINITY	3	20	84	19670630		19850405
	003336	6	8	249	8124800000			W FK TRINITY	3	24	67	19631231		19850405
	003337	6	8	249	8124600000			W FK TRINITY	3	22	22	19661231		19850405
	003338	6	8	184	8105100000			GOSHEN CR	3	2	18	19670705	2	19850405
	003339	6	8	220	7870250000			UNNAMED	1			19770131	338	19850405
	003340	6	8	220	6400000000		CITY OF FORT WORTH	W FK TRINITY	1	12143		19140627	38124	19850405

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	003812		6	8	220	6280000000		TARRANT COUNTY WCID 1	CEMENT CR	7			19560402	3952	19850405
A	003813		1	8	220	6525000000	003527	GIBRALTAR SAVINGS ASSN	WILLOW CR	7	27		19770926	27	19771214
	003813		6	8	220	6238900000		TARRANT COUNTY WCID 1	W FK TRINITY	3	130	65	19221231	5	19850405
A	003814		1	12	182	3345550000	003529	EARL WADDELL INC	PANAMA CR	3	55	28	19771011	139	19771208
	003814		6	8	220	7700000000		RIVER CREST COUNTRY CLUB	W FK TRINITY	3	210	105	19370525	5	19850405
R	003815	R	4	8	057	4999000000	0000000	FOREST OAKS COUNTRY CLUB INC	UNNAMED OF TRI	3			19770523		
	003815		6	18	046	7541600000		[redacted]	GUADALUPE RIVER	1	3		19630531		19850716
T	003816		1	14	200	7832610000	003552	[redacted]	VALLEY CR	3	6	18	19771011	6	19780406
	003816		6	18	046	7541400000		WHITEWATER SPORTS INC	UNNAMED&GUAD	7	1460		19720925	2	19850716
A	003817		1	12	215	2490500000	003543	[redacted]	UNNAMED OF	3	50	70	19771011	115	19780222
	003817		6	18	046	7541300000		[redacted]	GUADALUPE RIVER	3	79	79	19530630		19850716
A	003818		1	21	082	1480000000	003530	[redacted]	BUCKHORN CR	3	25	100	19771011	112	19771208
	003818		6	18	046	7535500000		[redacted]	GUADALUPE RIVER	7			19291231	35	19850716
	003819		1	23	071	9910000000	003544	INDIAN CLIFFS RANCH INC	SAN FELIPE	7	52		19771011	52	19780222
	003819		6	18	046	7530000000		[redacted]	GUADALUPE RIVER	3	14	9	19140629		19850716
	003819		6	18	046	7530000000		[redacted]	GUADALUPE RIVER	1	9		19140629		19850716
R	003820	R	4	8	057	9052000000	0000000	KNOLLWOOD GOLF CLUB INC	UNNAMED OF TRI	3			19770511		
	003820		6	18	046	7261000000		VETERANS OF FOREIGN WARS	GUADALUPE RIVER	4	3		19180520		19850716
A	003821		1	12	166	1610495000	003545	[redacted]	SERVER BR	2	28		19771011	28	19780222
A	003821		1	12	166	1610495000	003545	[redacted]	SERVER BR	3	72	100	19771011	173	19780222
	003821		6	18	046	7260000000		[redacted]	GUADALUPE RIVER	3	1	1	19140629		19850716
	003821		6	18	046	7260000000		[redacted]	GUADALUPE RIVER	3	4	3	19180520		19850716
A	003822		1	12	166	1153870000	003546	[redacted]	UNNAMED OF	3	5	48	19771011	2	19780222
	003822		6	18	046	7235000000		[redacted]	GUADALUPE RIVER	3	3	1	19140630		19850716
T	003823		1	12	021	0747120000	003540	[redacted]	UNNAMED OF	7	240		19771017	240	19780208
	003823		6	18	046	7150000000		CITY OF NEW BRAUNFELS	COMAL RIVER	1	1289		19140627		19850716
	003824		1	19	010	5887295000	003541	CITY OF BANDERA	MEDINA	7	0		19771017	22	19780208
	003824	A	6	18	046	7025000000		NEW BRAUNFELS UTILITIES	COMAL	3	200		19140601	150	19850716
	003824	A	6	18	046	7025000000		NEW BRAUNFELS UTILITIES	COMAL	2	139198	3418	19140601		19850716
	003824	A	6	18	046	7025000000		NEW BRAUNFELS UTILITIES	COMAL	5	124870		19140601		19850716
	003824	A	6	18	046	7025000000		NEW BRAUNFELS UTILITIES	COMAL	1	2240		19140601		19850716
	003825		1	18	010	7718000000	003567	[redacted]	VERDE CREEK	7	0		19771017	277	19780502
	003825		6	18	046	7220000000		CENTRAL TX COUNTRY CLUB INC	UNNAMED	7			19760920	9	19850716
T	003826		1	10	101	0900000000	003542	CHEMICAL EXCHANGE INDUSTRIES	BUFFALO BAYOU	2	300		19771017		19780208
	003826		6	18	046	7024000000		CITY OF NEW BRAUNFELS	OLD CHL COMAL	3	100	50	19690630	8	19850716
R	003827	R	4	6	003	6815387000	0000000	CROWN COLONY COUNTRY CLUB IN	UNNAMED CR	3			19770801		
	003827		6	18	046	7000000000		CITY OF NEW BRAUNFELS	COMAL RIVER	7			19140629	40	19850716
A	003828		1	13	161	4829000000	003535	[redacted]	CANEY CREEK	3	30	60	19771107		19780131
	003828		6	18	046	6875000000		[redacted]	COMAL	3	3	3	19140630	3	19850716
A	003829		1	12	067	2468900000	003537	[redacted]	UNNAMED OF	3	40	40	19771031		19780201
	003829		6	18	046	6800000000		MISSION VALLEY TEXTILES, INC	GUADALUPE RIVE	2	5000	500	19140629	74	19850716
R	003830	R	4	19	015	5201000000	0000000	[redacted]	UNNAMED	7			19770614		
	003830		6	18	046	6850000000		NEW BRAUNFELS UTILITIES	GUADALUPE RIVER	2	5		19140629		19850716
A	003831		1	12	047	2425990000	003538	[redacted]	UNNAMED	3	15	30	19771031		19780201
	003831		6	18	094	6500000000		[redacted]	GUADALUPE RIVER	3	5	5	19140630		19850716
A	003832	A	1	8	220	5599900000	003563A	[redacted]	JOHNSON	3	42	80	19771031	44	19780418
	003832		6	18	094	6432000000		[redacted]	GUADALUPE RIVER	3	44	31	19120419		19850716
A	003833		1	8	049	9634760000	003548	[redacted]	UNNAMED OF	3	10	16	19771031	8	19780301
	003833		6	18	094	6431000000		[redacted]	GUADALUPE RIVER	3	56	39	19120419		19850716
A	003834	A	1	13	161	4813000000	003547A	[redacted]	CANEY CR	3	80	40	19771212		19780301
	003834		6	18	094	6430000000		CANYON REGIONAL WATER AUTH	GUADALUPE RIVER	3	19	12	19120419		19850716
	003834		6	18	094	6430000000		[redacted]	GUADALUPE RIVER	3	71	48	19120419		19850716
A	003835		1	12	095	5884100000	003536	[redacted]	RUNNING WATER	3	130	272	19771219	1	19780130

ancel tatus	WR Number	Type	Basin	County	River Order Number	Permit	Name of Owner	Stream	Use	Amt Ac-Ft/Yr	Acreage	Priority Date	Res Cap in Ac-Ft	Date Issued
	003789	6	1	106	4250000000		SHANNON LIFETIME TRUST	BOGGY CREEK	7			19480505	330	19850530
	003790	1	12	167	2046680000	003510	[redacted]	UNNAMED OF/AND	3	285	170	19770711	310	19771025
	003790	6	1	106	4000000000		US FOREST SERVICE	BOGGY CREEK	7			19380304	553	19850530
	003791	1	8	184	6800050000	003533	MONTEX DRILLING CO	TURKEY CR	1			19770718	211	19780111
	003791	2	12	166	1210250000		[redacted]	BRAZOS RIVER	3	0		19690820		19700428
	003791	6	1	056	2500000000		C D SHAMBURGER RANCH INC	COLDWATER CR	3	190	211	19651231	30	19850530
	003792 A	1	14	206	3295500000	003511A	[redacted]	SAN SABA	3	22		19770718		19771025
	003792	6	1	098	1700000000		[redacted]	UNNAMED	3	40	40	19670411		19850530
	003793	1	14	042	4953950000	003512	CENTRAL COLORADO RIVER AUTH	GRAPE CR	1	75		19770718	232	19771025
	003793	6	1	171	1656500000		CACTUS FEEDERS, INC.	N PALO DURO CR	3	90	91	19730604		19850530
	003794	1	8	119	8390000000	003504	[redacted]	UNNAMED OF	1	250		19770718	250	19771014
	003794	6	1	211	1655000000		GOSSETT INC	N PALO DURO CR	3	150	210	19700601		19850530
	003795	1	12	104	4616900000	003513	HASKELL COUNTY COUNTRY CLUB	UNNAMED TRIBS	3	7	1	19770725	75	19771025
	003795	6	1	211	1654800000		[redacted]	N PALO DURO CR	3	125	100	19711116		19850530
	003796	1	2	191		0000000	COMBINED WITH A3798							
	003796	6	1	171	1653000000		POTASH RESOURCES INC	UNNAMED	3	195	100	19690602		19850530
	003797	1	14	017	8805000000	003532	COLEMAN FARMS INC	W SALT DRAW	7	158		19770725	158	19771221
	003797	6	1	171	1650950000		[redacted]	S PALO DURO CR	3			19780123	52	19850530
	003798 A	1	2	191	8655000000	003507A	[redacted]	TIERRA BLANCA	3	502	563	19770725	120	19771021
	003798	2	14	150	1166850000		[redacted]	LLANO RIVER	4	0		19690901		19700428
	003798	6	1	171	1650000000		[redacted]	UNNAMED	3	50	151	19680722		19850530
	003799	1	12	119	3681000000	003514	CITY OF BRYSON	EAST ROCK CR	1	90		19770801	950	19771025
	003799	6	1	117	1630000000		[redacted]	UNNAMED	3	106	62	19370630	26	19850530
	003800 A	1	21	232	3010000000	003521A	[redacted]	FRIO	3	1000	500	19770815		19771110
	003800	6	1	098	1500000000		[redacted]	PALO DURO CR	3	90	60	19271221		19850530
	003801	1	8	057	5368000000	003515	CITY OF DALLAS	TURTLE CR	7	64		19770815	64	19771031
	003801	6	1	098	1180000000		[redacted]	UNNAMED	3			19760120		19850530
	003802	1	8	057	5366000000	003516	CITY OF DALLAS	UNNAMED OF	7	32		19770815	32	19771031
	003802	6	1	098	1150000000		[redacted]	HORSE CREEK	3	120	82	19670531	25	19850530
	003803 A	1	19	128	0751000000	003517A	[redacted]	SAN ANTONIO	3	160	240	19770815		19771103
	003803	6	1	098	1014500000		PALO DURO RIVER AUTHORITY	PALO DURO CR	1	10460		19740423	60900	19850530
	003804	1	8	129	3986500000	003518	N B HUNT RANCHES	UNNAMED OF	7	933		19770815	933	19771103
	003804	2	14	086	1050500000		[redacted]	COAL CREEK	4	0		19690901		19700428
	003804	6	1	098	1660000000		[redacted]	UNNAMED	3	40	80	19690505		19850530
	003805	1	19	010	5888750000	003519	[redacted]	HICKS CR	3	5	4	19770815		19771103
	003805	6	1	148	0700000000		[redacted]	KIOWA CR	3	102	153	19850430		19850530
	003806	1	21	163	2620000000	003551	EDWARDS UNDERGROUND W D	SECO CREEK	9	1185		19770815	2	19780330
	003806	6	1	179	0500000000		OCHILTREE COUNTY	WOLF CREEK	7			19380822	862	19850530
	003807 A	1	14	218	2072010000	003523A	FORT TERRETT COMB 14-1483A	N LLANO						
	003807	6	1	148	0200000000		[redacted]	PLUM CREEK	3	20	6	19620901		19850530
	003808	1	19	128	2191450000	003526	[redacted]	SAN ANTONIO	3	232	116	19770829		19771123
	003808 A	6	8	249	8250000000		TARRANT COUNTY WCID 1	W FK TRINITY	1	5000		19260706	387000	19850405
	003808 A	6	8	249	8250000000		TARRANT COUNTY WCID 1	W FK TRINITY	4	7500		19260706		19850405
	003808 A	6	8	249	8250000000		TARRANT COUNTY WCID 1	W FK TRINITY	3	2500	1250	19260706		19850405
	003808 A	6	8	249	8250000000		TARRANT COUNTY WCID 1	W FK TRINITY	7			19370712		19850405
	003809	1	8	220	6530000000	003528	CITY OF FORT WORTH	CLEAR FK TRIN	7	12		19770829	12	19771208
	003809 A	6	8	220	7930000000		TARRANT COUNTY WCID 1	W FK TRINITY	1	158495		19250713	210000	19850405
	003809 A	6	8	220	7930000000		TARRANT COUNTY WCID 1	W FK TRINITY	4	1105		19250713		19850405
	003810	1	1	188	8300050000	003580	RANCH MARSH	UNNAMED OF	7	325		19770829	325	19780621
—	003810 A	6	8	220	6325000000		TARRANT COUNTY WCID #1	C FK TRINITY	7	18		19710601	160	19850405
	003811 A	1	12	166	1233750000	003539A	[redacted]	UNNAMED	3	300	500	19770829	50	19780206
	003811	6	8	220	6290000000		TARRANT COUNTY WCID 1	MARINE CR	7			19560402	15366	19850405
	003812	1	12	072	3224250000	003524	[redacted]	UNNAMED OF	3	43	43	19770912	7	19771118

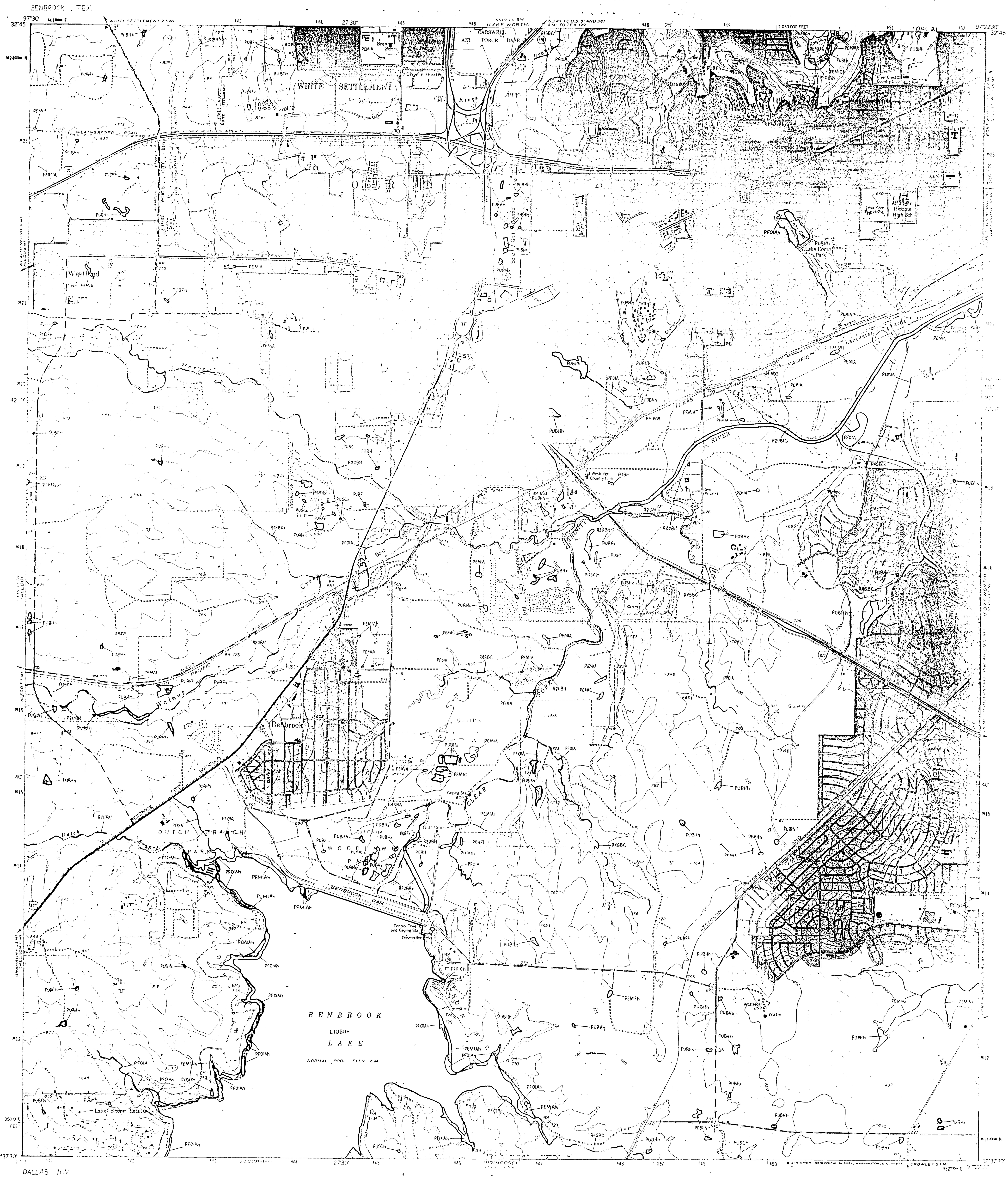
COUNTY CODE LIST

1 ANDERSON
2 ANDREW
3 ANGELINA
4 ARANSAS
5 ARCHER
6 ARMSTRONG
7 ATASCOSA
8 AUSTIN
9 BAILEY
10 BANDERA
11 BASTROP
12 BAYLOR
13 BEE
14 BELL
15 BEXAR
16 BLANCO
17 BORDEN
18 BOSCUE
19 BOWIE
20 BRAZORIA
21 BRAZOS
22 BREWSTER
23 BRISCOE
24 BROOKS
25 BROWN
26 BURLESON
27 BURNET
28 CALDWELL
29 CALHOUN
30 CALLAHAN
31 CAMERON
32 CAMP
33 CARSON
34 CASS
35 CASTRO
36 CHAMBERS
37 CHEROKEE
38 CHILDRESS
39 CLAY
40 COCHRAN
41 COKE
42 COLEMAN
43 COLLIN
44 COLLINGWORTH
45 COLORADO
46 COMAL
47 COMANCHE
48 CONCHO
49 COOKE
50 CORYELL
51 COTTLE
52 CRANE
53 CROCKETT
54 CROSBY
55 CULBERSON
56 DALLAM
57 DALLAS
58 DAWSON
59 DEAF SMITH
60 DELTA
61 DENTON
62 DEWITT
63 DICKENS
64 DIMMIT
65 DONLEY
66 DUVAL
67 EASTLAND
68 ECTOR
69 EDWARDS
70 ELLIS
71 EL PASO
72 ERATH
73 FALLS
74 FANNIN
75 FAYETTE
76 FISHER
77 FLOYD
78 FOARD
79 FORT BEND
80 FRANKLIN
81 FREESTONE
82 FRIO
83 GAINES
84 GALVESTON
85 GARZA
86 GILLESPIE
87 GLASSCOCK
88 GOLIAD
89 GONZALES
90 GRAY
91 GRAYSON
92 GREGG
93 GRIMES
94 GUADALUPE
95 HALE
96 HALL
97 HAMILTON
98 HANSFORD
99 HARDEMAN
100 HARDIN
101 HARRIS
102 HARRISON
103 HARTLEY
104 HASKELL
105 HAYS
106 HEMPHILL
107 HENDERSON
108 HIDALGO
109 HILL
110 HOCKLEY
111 HOOD
112 HOPKINS
113 HOUSTON
114 HOWARD
115 HUDSPETH
116 HUNT
117 HUTCHINSON
118 IRION
119 JACK
120 JACKSON
121 JASPER
122 JEFF DAVIS
123 JEFFERSON
124 JIM HOGG
125 JIM WELLS
126 JOHNSON
127 JONES
128 KARNES
129 KAUFMAN
130 KENDALL
131 KENEDY
132 KENT
133 KERR
134 KIMBLE
135 KING
136 KINNEY
137 KLEBERG
138 KNOX
139 LAMAR
140 LAMB
141 LAMPASAS
142 LA SALLE
143 LAVACA
144 LEE
145 LEON
146 LIBERTY
147 LIMESTONE
148 LIPSCOMB
149 LIVE OAK
150 LLANO
151 LOVING
152 LUBBOCK
153 LYNN
154 MCCULLOCH
155 MCLENNAN
156 MCMULLEN
157 MADISON
158 MARION
159 MARTIN
160 MASON
161 MATAGORDA
162 MAVERICK
163 MEDINA
164 MENARD
165 MIDLAND
166 MILAM
167 MILLS
168 MITCHELL
169 MONTAGUE
170 MONTGOMERY
171 MOORE
172 MORRIS
173 MOTLEY
174 NACOGDOCHES
175 NAVARRO
176 NEWTON
177 NOLAN
178 NUECES
179 OCHILTREE
180 OLDHAM
181 ORANGE
182 PALO PINTO
183 PANOLA
184 PARKER
185 PARMER
186 PECOS
187 POLK
188 POTTER
189 PRESIDIO
190 RAINS
191 RANDALL
192 REAGAN
193 REAL
194 RED RIVER
195 REEVES
196 REFUGIO
197 ROBERTS
198 ROBERTSON
199 ROCKWALL
200 RUNNELS
201 RUSK
202 SABINE
203 SAN AUGUSTINE
204 SAN JACINTO
205 SAN PATRICIO
206 SAN SABA
207 SCHLEICHER
208 SCURRY
209 SHACKELFORD
210 SHELBY
211 SHERMAN
212 SMITH
213 SOMERVELL
214 STARR
215 STEPHENS
216 STERLING
217 STONEWALL
218 SUTTON
219 SWISHER
220 TARRANT
221 TAYLOR
222 TERRELL
223 TERRY
224 THROCKMORTON
225 TITUS
226 TOM GREEN
227 TRAVIS
228 TRINITY
229 TYLER
230 UPSHUR
231 UPTON
232 UVALDE
233 VAL VERDE
234 VAN ZANDT
235 VICTORIA
236 WALKER
237 WALLER
238 WARD
239 WASHINGTON
240 WEBB
241 WHARTON
242 WHEELER
243 WICHITA
244 WILBARGER
245 WILLACY
246 WILLIAMSON
247 WILSON
248 WINKLER
249 WISE
250 WOOD
251 YOAKUM
252 YOUNG
253 ZAPATA
254 ZAVALA

Reference 20

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



SCALE 1:24 000

1 acre — 5 acres — 10 acres — 20 acres — 40 acres

ACREAGE GUIDE

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Regional Director (ARDE) Region II
U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, New Mexico 87103

SPECIAL NOTE

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SYMBOLOGY EXAMPLE

SYSTEM
SUBSYSTEM
CLASS
L2EM2F
SUBCLASS, WATER REGIME
UPLAND (NON-WETLAND)
U
R2UBH
(LINEAR DEEPWATER HABITAT)

U Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.

NOTES TO THE USER

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- This map uses the class Unconsolidated Shore (US). On earlier NWI maps that class was designated Beach/Bar (BB), or Flat (FL). Subclasses remain the same in both versions.

AERIAL PHOTOGRAPHY

DATE: 11 / / 81 — DATE: / /
SCALE: 1:58 000 — SCALE:
TYPE: CIR — TYPE:

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Prepared by National Wetlands Inventory
1992

SYSTEM: M — MARINE

	1 — SUBTIDAL					2 — INTERTIDAL			
CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RF — REEF	OW — *OPEN WATER/ Unknown Bottom*	AB — AQUATIC BED	RF — REEF	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE
Subclass	1 Bedrock 2 *Rubble*	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm		1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm	1 Bedrock 2 *Rubble*	1 Cobble-Gravel 2 *Sand* 3 Mud 4 Organic

SYSTEM: E — ESTUARINE

	1 — SUBTIDAL					2 — INTERTIDAL							
CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RF — REEF	OW — *OPEN WATER/ Unknown Bottom*	AB — AQUATIC BED	RF — REEF	SB — STREAMBED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED
Subclass	1 Bedrock 2 *Rubble*	1 Cobble-Gravel 2 *Sand* 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusc 3 Worm		1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusc 3 Worm	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*

SYSTEM: R — RIVERINE

SUBSYSTEM: 1 — TIDAL; 2 — LOWER PERENNIAL; 3 — UPPER PERENNIAL; 4 — INTERMITTENT; 5 — *UNKNOWN PERENNIAL*

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	*SB — STREAMBED	AB — AQUATIC BED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	**EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 *Vegetated*	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 *Organic* 5 Vegetated	2 Nonpersistent	

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS

SYSTEM: L — LACUSTRINE

	1 — LIMNETIC				2 — LITTORAL						
CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	OW — *OPEN WATER/ Unknown Bottom*	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 *Organic*	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 *Floating Vascular* 5 *Unknown Submergent* 6 *Unknown Surface*		1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

SYSTEM: P — PALUSTRINE

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	US — UNCONSOLIDATED SHORE	ML — MOSS LICHEN	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	

MODIFIERS

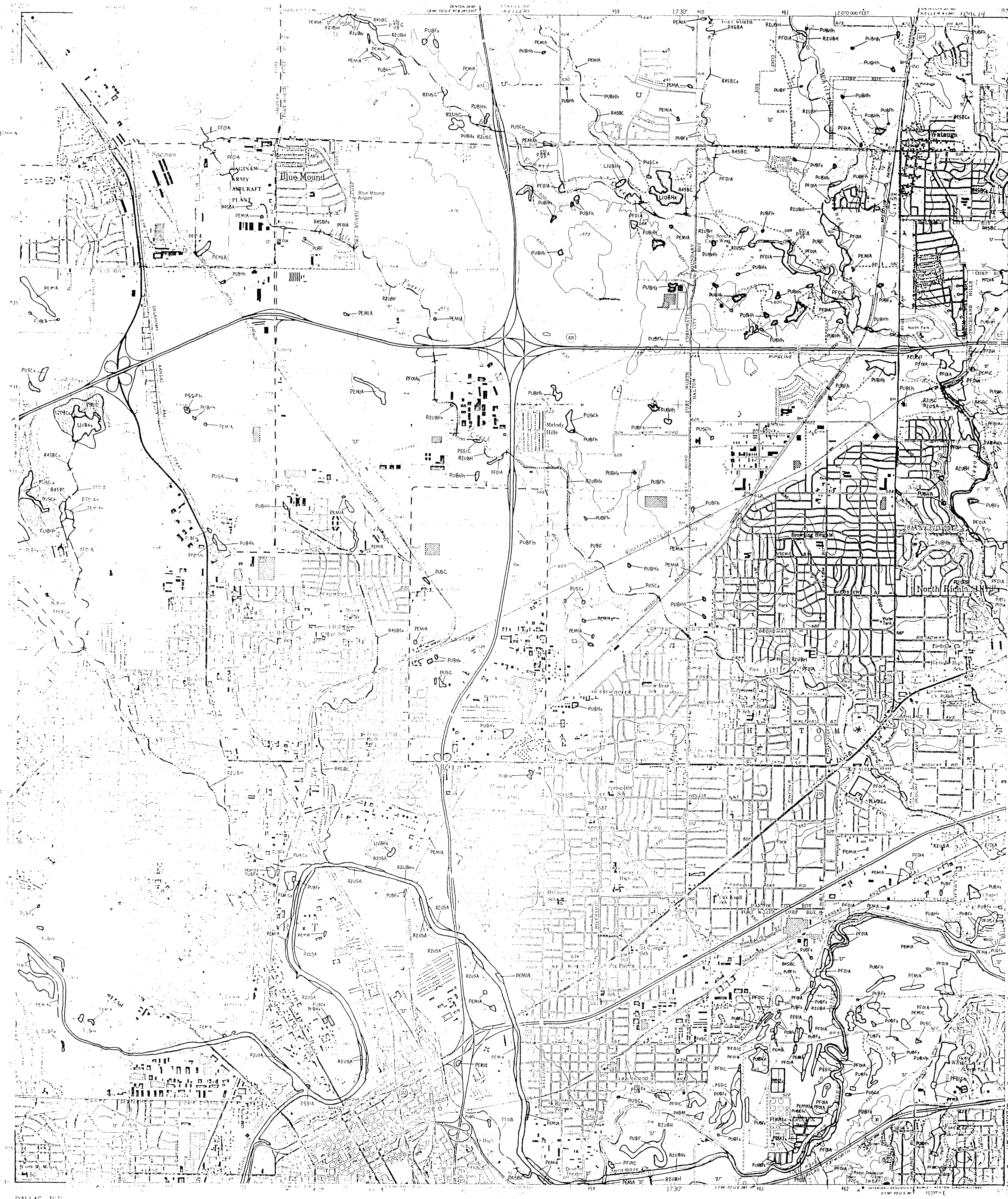
In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME: Non-Tidal		WATER REGIME: Tidal	WATER CHEMISTRY: Coastal Halinity	Inland Salinity	pH Modifiers for all Fresh Water	SOIL	SPECIAL MODIFIERS	
A Temporarily Flooded B Saturated C Seasonally Flooded D *Seasonally Flooded/ Well Drained* E *Seasonally Flooded/ Saturated* F Semipermanently Flooded G Intermittently Exposed	H Permanently Flooded J Intermittently Flooded K Artificially Flooded W Intermittently Flooded/Temporary Y Saturated/Semipermanent/ Seasonal Z Intermittently Exposed/Permanent U *Unknown*	K *Artificially Flooded* L Subtidal M Irregularly Exposed N Regularly Flooded P Irregularly Flooded *S Temporary-Tidal *R Seasonal-Tidal *T Semipermanent-Tidal *V Permanent-Tidal U *Unknown*	1 Hyperhaline 2 Euhaline 3 Mixohaline *(Brackish)* 4 Polyhaline 5 Mesohaline 6 Oligohaline 0 Fresh	7 Hypersaline 8 Eusaline 9 Mixosaline 0 Fresh	a Acid t Circumneutral i Alkaline	g Organic n Mineral	b *Beaver* d *Partially Drained/Ditched* f Farmed	h *Diked/Impounded* r Artificial Substrate s *Spoil* x Excavated

*These water regimes are only used in tidally influenced, freshwater systems

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



DALLAS NW
FORT WORTH

HALTOM CITY, TEX

SCALE 1:24000

1 MILE

7000 FEET

1 KILOMETER

1 acre · 5 acres · 10 acres · 20 acres · 40 acres

ACREAGE GUIDE

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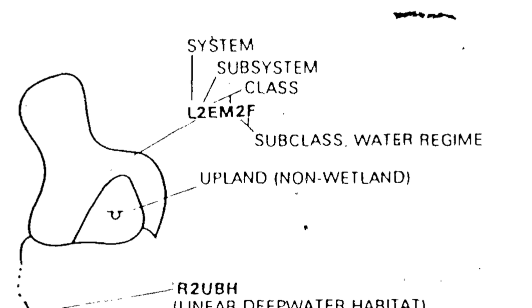

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AERIAL PHOTOGRAPHY

DATE: 10 / / 81 · SCALE: 1:58 000 · TYPE: CIR

DATE: / / · SCALE: · TYPE:

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

...ared by National Wetlands Inventory

1992

SYSTEM: M — MARINE

SUBSYSTEM: 1 — SUBTIDAL

- CLASS RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
- RF — REEF: 1 Coral, 3 Worm
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM: 2 — INTERTIDAL

- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
- RF — REEF: 1 Coral, 3 Worm
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic

SYSTEM: E — ESTUARINE

SUBSYSTEM: 1 — SUBTIDAL

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RF — REEF: 2 Mollusc, 3 Worm
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM: 2 — INTERTIDAL

- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RF — REEF: 2 Mollusc, 3 Worm
- SB — STREAMBED: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- EM — EMERGENT: 1 Persistent, 2 Nonpersistent
- SS — SCRUB-SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*

SYSTEM: R — RIVERINE

SUBSYSTEM: 1 — TIDAL · 2 — LOWER PERENNIAL · 3 — UPPER PERENNIAL · 4 — INTERMITTENT · 5 — *UNKNOWN PERENNIAL*

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- *SB — STREAMBED: 1 Bedrock, 2 Rubble, 3 Cobble-Gravel, 4 Sand, 5 Mud, 6 Organic, 7 Vegetated
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
- **EM — EMERGENT: 2 Nonpersistent
- OW — *OPEN WATER/Unknown Bottom*

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS.

SYSTEM: L — LACUSTRINE

SUBSYSTEM: 1 — LIMNETIC

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM: 2 — LITTORAL

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
- EM — EMERGENT: 2 Nonpersistent
- OW — *OPEN WATER/Unknown Bottom*

SYSTEM: P — PALUSTRINE

- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic, 5 Vegetated
- ML — MOSS-LICHEN: 1 Moss, 2 Lichen
- EM — EMERGENT: 1 Persistent, 2 Nonpersistent
- SS — SCRUB-SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- OW — *OPEN WATER/Unknown Bottom*

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal:
A Temporarily Flooded
B Saturated
C Seasonally Flooded
D *Seasonally Flooded Well Drained*
E *Seasonally Flooded Saturated*
F Semipermanently Flooded
G Intermittently Exposed
H Permanently Flooded
J Intermittently Flooded
K Artificially Flooded
W Intermittently Flooded/Temporary
Y Saturated/Semipermanent/Seasonal
Z Intermittently Exposed/Permanent
U Unknown

Tidal:
K *Artificially Flooded*
L Subtidal
M Irregularly Exposed
N Regularly Flooded
P Irregularly Flooded
*S Temporary-Tidal
*R Seasonal-Tidal
*T Semipermanent-Tidal
*V Permanent-Tidal
U *Unknown*

*These water regimes are only used in tidally influenced, freshwater systems

WATER CHEMISTRY

Coastal Halinity: 1 Hyperhaline, 2 Euhaline, 3 Mixohaline *(Brackish)*, 4 Polyhaline, 5 Mesohaline, 6 Oligohaline, 0 Fresh

Inland Salinity: 7 Hypersaline, 8 Eusaline, 9 Mixosaline, 0 Fresh

pH Modifiers for all Fresh Water: a Acid, t Circumneutral, i Alkaline

SOIL

g Organic
n Mineral

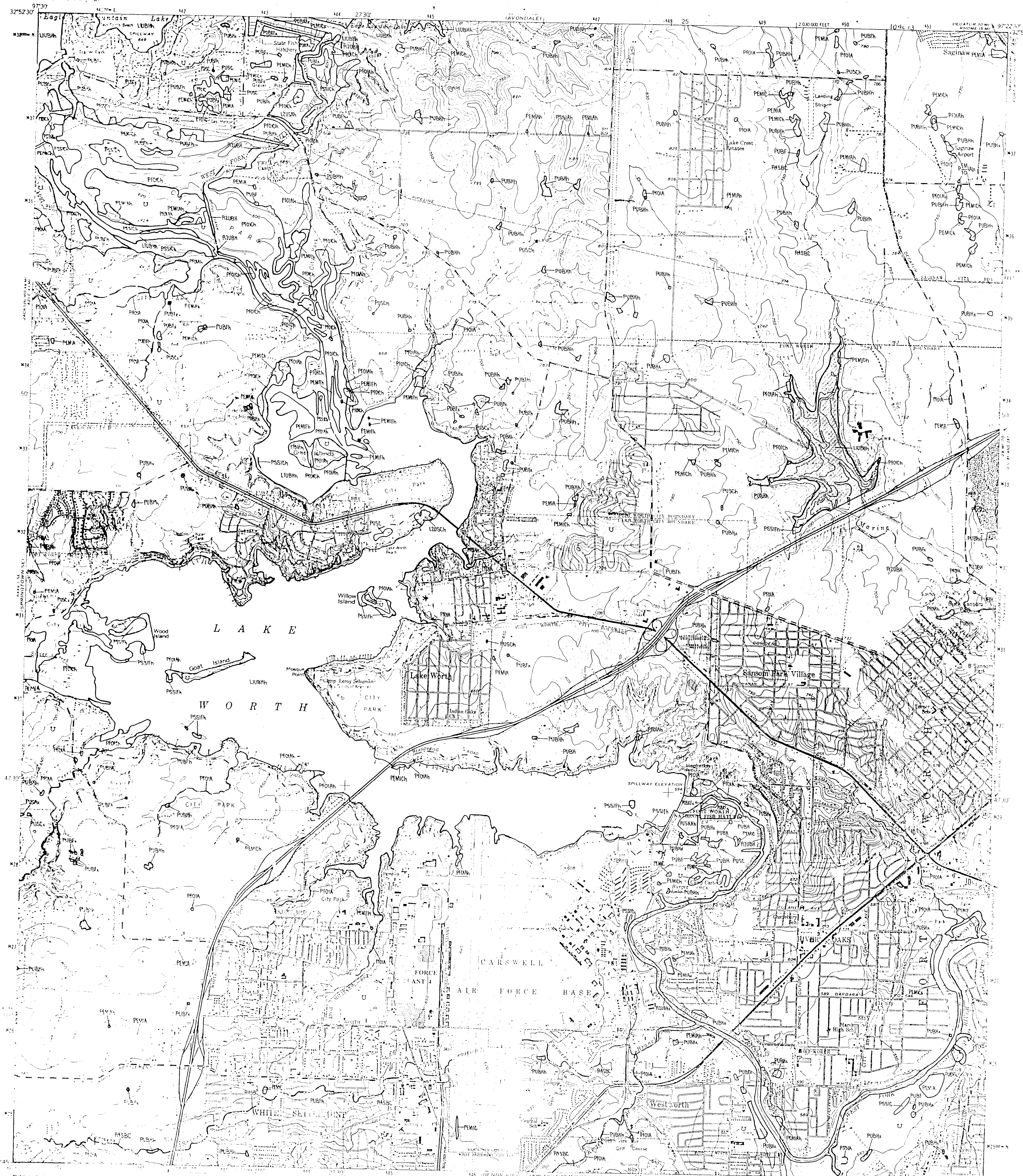
SPECIAL MODIFIERS

b *Beaver*
d *Partially Drained/Ditched*
f Farmed
h Diked/Impounded
r Artificial Substrate
s *Spoil*
x Excavated

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR

LAKE WORTH, TEX



DALLAS NW
FORT WORTH

LAKE WORTH, TEX

SCALE 1:24 000

1 MILE

1 acre 10 acres 20 acres

ACREAGE GUIDE

Other information including a narrative report concerning the wetland resources depicted on this document may be available. For information, contact:

Regional Director (ARDE) Region II
U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, New Mexico 87103

SPECIAL NOTE

This document was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with **Classification of Wetlands and Deepwater Habitats of the United States** (FWS/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document.

Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. **Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.**

SYMBOLOGY EXAMPLE

SYSTEM
SUBSYSTEM
CLASS
L2EM2F
SUBCLASS, WATER REGIME
UPLAND (NON-WETLAND)
R2OWH
(LINEAR DEEPWATER HABITAT)

U — Primarily represents **upland** areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.

NOTES TO THE USER

- Wetlands which have been field examined are indicated on the map by an asterisk (*).
- Additions or corrections to the wetlands information displayed on this map are solicited. Please forward such information to the address indicated.
- Subsystems, Classes, Subclasses, and Water Regimes in *Italics* were developed specifically for NATIONAL WETLANDS INVENTORY mapping.
- Some areas designated as R4SB, R4SBW, OR R4SBJ (INTERMITTENT STREAMS) may not meet the definition of wetland.
- This map uses the class Unconsolidated Shore (US). *On earlier NWI maps that class was designated Beach/Bar (BB), or Flat (FL).* Subclasses remain the same in both versions.

AERIAL PHOTOGRAPHY

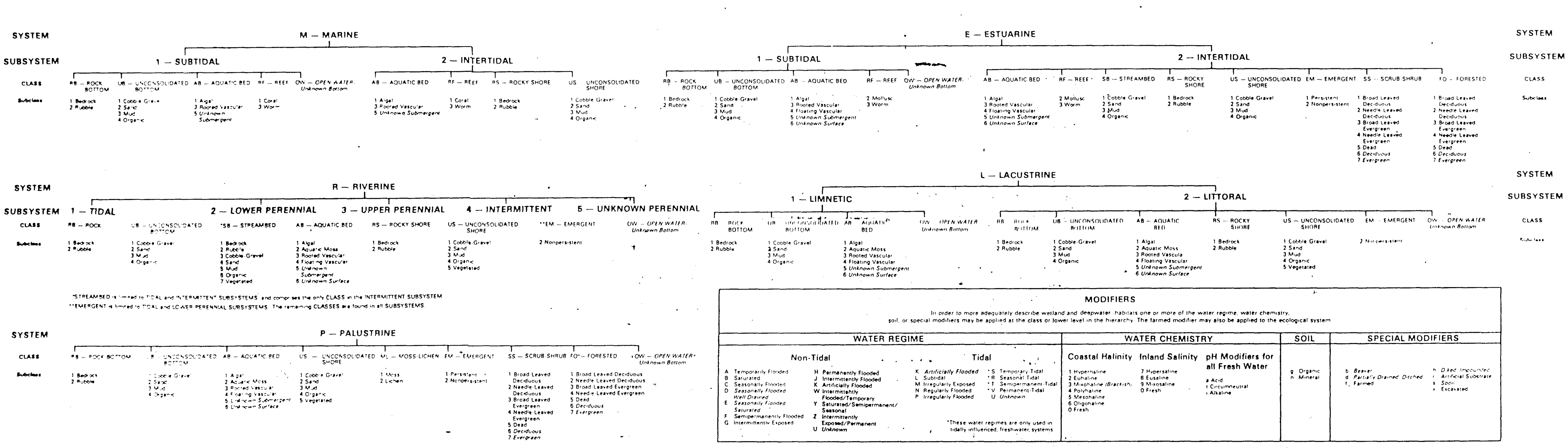
DATE: 11 / / 81	DATE: / /
SCALE: 1:58000	SCALE:
TYPE: CIR	TYPE:

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Prepared by National Wetlands Inventory

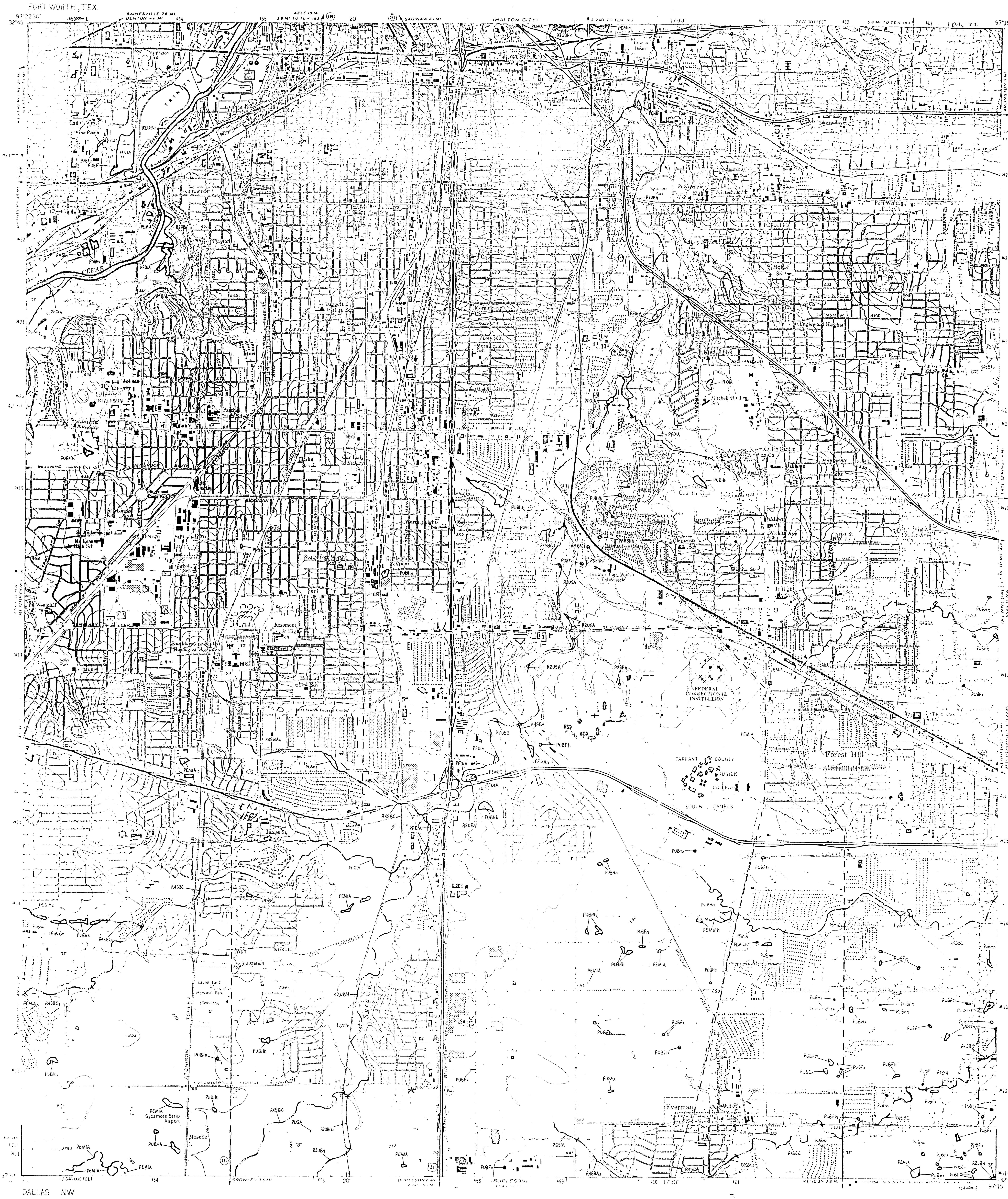
1992



NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR

FORT WORTH, TEX.



FORT WORTH, TEX

SCALE 1:24 000

1 MILE — 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET — 1 KILOMETER

1 acre · 5 acres · 10 acres · 20 acres · 40 acres

ACREAGE GUIDE

For information on availability of NWI maps, call 1-800-USA-MAPS.

Regional Director (ARDE) Region II
U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, New Mexico 87103

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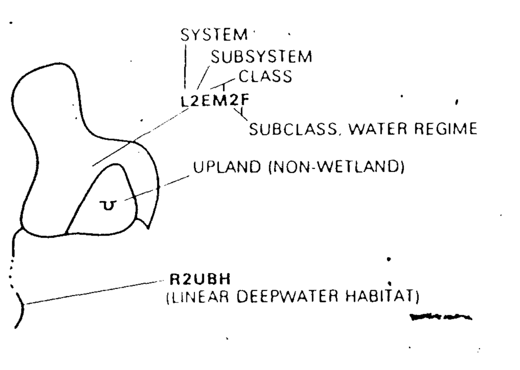
SYMBOLOGY EXAMPLE



U — Primarily represents **upland** areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.

NOTES TO THE USER

- Subsystems, Classes, Subclasses, and Water Regimes in *Italics* were developed specifically for NATIONAL WETLANDS INVENTORY mapping.
- Some areas designated as R4SB, R4SBW, OR R4SBJ (INTERMITTENT STREAMS) may not meet the definition of wetland.
- This map uses the class Unconsolidated Shore (US). On earlier NWI maps that class was designated Beach/Bar (BB), or Flat (FL). Subclasses remain the same in both versions.

AERIAL PHOTOGRAPHY

DATE: 10 / / 81 — DATE: / /
SCALE: 1:58 000 — SCALE:
TYPE: CIR — TYPE:

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Prepared by National Wetlands Inventory

1992

SYSTEM: M — MARINE

SUBSYSTEM 1 — SUBTIDAL
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
- RF — REEF: 1 Coral, 3 Worm
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM 2 — INTERTIDAL
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 5 *Unknown Submergent*
- RF — REEF: 1 Coral, 3 Worm
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic

SYSTEM: E — ESTUARINE

SUBSYSTEM 1 — SUBTIDAL
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RF — REEF: 2 Mollusc, 3 Worm
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM 2 — INTERTIDAL
- AB — AQUATIC BED: 1 Algal, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RF — REEF: 2 Mollusc, 3 Worm
- SB — STREAMBED: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- EM — EMERGENT: 1 Persistent, 2 Nonpersistent
- SS — SCRUB-SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*
- FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved Deciduous, 3 Broad-Leaved Evergreen, 4 Needle-Leaved Evergreen, 5 Dead, 6 *Deciduous*, 7 *Evergreen*

SYSTEM: R — RIVERINE

SUBSYSTEM: 1 — TIDAL; 2 — LOWER PERENNIAL; 3 — UPPER PERENNIAL; 4 — INTERMITTENT; 5 — *UNKNOWN PERENNIAL*
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 Organic
- *SB — STREAMBED: 1 Bedrock, 2 Rubble, 3 Cobble-Gravel, 4 Sand, 5 Mud, 6 Organic, 7 Vegetated
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 Floating Vascular, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*, 5 Vegetated
- **EM — EMERGENT: 2 Nonpersistent
- OW — *OPEN WATER/Unknown Bottom*

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS

SYSTEM: L — LACUSTRINE

SUBSYSTEM 1 — LIMNETIC
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 *Floating Vascular*, 5 *Unknown Submergent*, 6 *Unknown Surface*
- OW — *OPEN WATER/Unknown Bottom*

SUBSYSTEM 2 — LITTORAL
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 *Floating Vascular*, 5 *Unknown Submergent*, 6 *Unknown Surface*
- RS — ROCKY SHORE: 1 Bedrock, 2 Rubble
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*, 5 Vegetated
- EM — EMERGENT: 2 Nonpersistent
- OW — *OPEN WATER/Unknown Bottom*

SYSTEM: P — PALUSTRINE
- RB — ROCK BOTTOM: 1 Bedrock, 2 Rubble
- UB — UNCONSOLIDATED BOTTOM: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*
- AB — AQUATIC BED: 1 Algal, 2 Aquatic Moss, 3 Rooted Vascular, 4 *Floating Vascular*, 5 *Unknown Submergent*, 6 *Unknown Surface*
- US — UNCONSOLIDATED SHORE: 1 Cobble-Gravel, 2 Sand, 3 Mud, 4 *Organic*, 5 Vegetated
- ML — MOSS-LICHEN: 1 Moss, 2 Lichen
- EM — EMERGENT: 1 Persistent, 2 Nonpersistent
- SS — SCRUB SHRUB: 1 Broad-Leaved Deciduous, 2 Needle-Leaved *Deciduous*, 3 Broad-Leaved Evergreen, 4 Needle-Leaved
- FO — FORESTED: 1 Broad-Leaved Deciduous, 2 Needle-Leaved *Deciduous*, 3 Broad-Leaved Evergreen, 4 Needle-Leaved
- OW — *OPEN WATER/Unknown Bottom*

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal
- A Temporarily Flooded
- B Saturated
- C Seasonally Flooded
- D *Seasonally Flooded/Well Drained*
- E *Seasonally Flooded/Saturated*
- F Semipermanently Flooded
- H Permanently Flooded
- J Intermittently Flooded
- K Artificially Flooded
- W Intermittently Flooded/Temporary
- Y Saturated/Semipermanent/Seasonal
- Z Intermittently

Tidal
- K *Artificially Flooded*
- L Subtidal
- M Irregularly Exposed
- N Regularly Flooded
- P Irregularly Flooded
- *S Temporary-Tidal
- *R Seasonal-Tidal
- *T Semipermanent-Tidal
- *V Permanent-Tidal
- U *Unknown*

*These water regimes are only used in

WATER CHEMISTRY

Coastal Halinity: 1 Hyperhaline, 2 Euhaline, 3 Mixohaline *(Brackish)*, 4 Polyhaline, 5 Mesohaline, 6 Oligohaline, 0 Fresh

Inland Salinity: 7 Hypersaline, 8 Eusaline, 9 Mixosaline, 0 Fresh

pH Modifiers for all Fresh Water: a Acid, t Circumneutral, i *Alkaline*

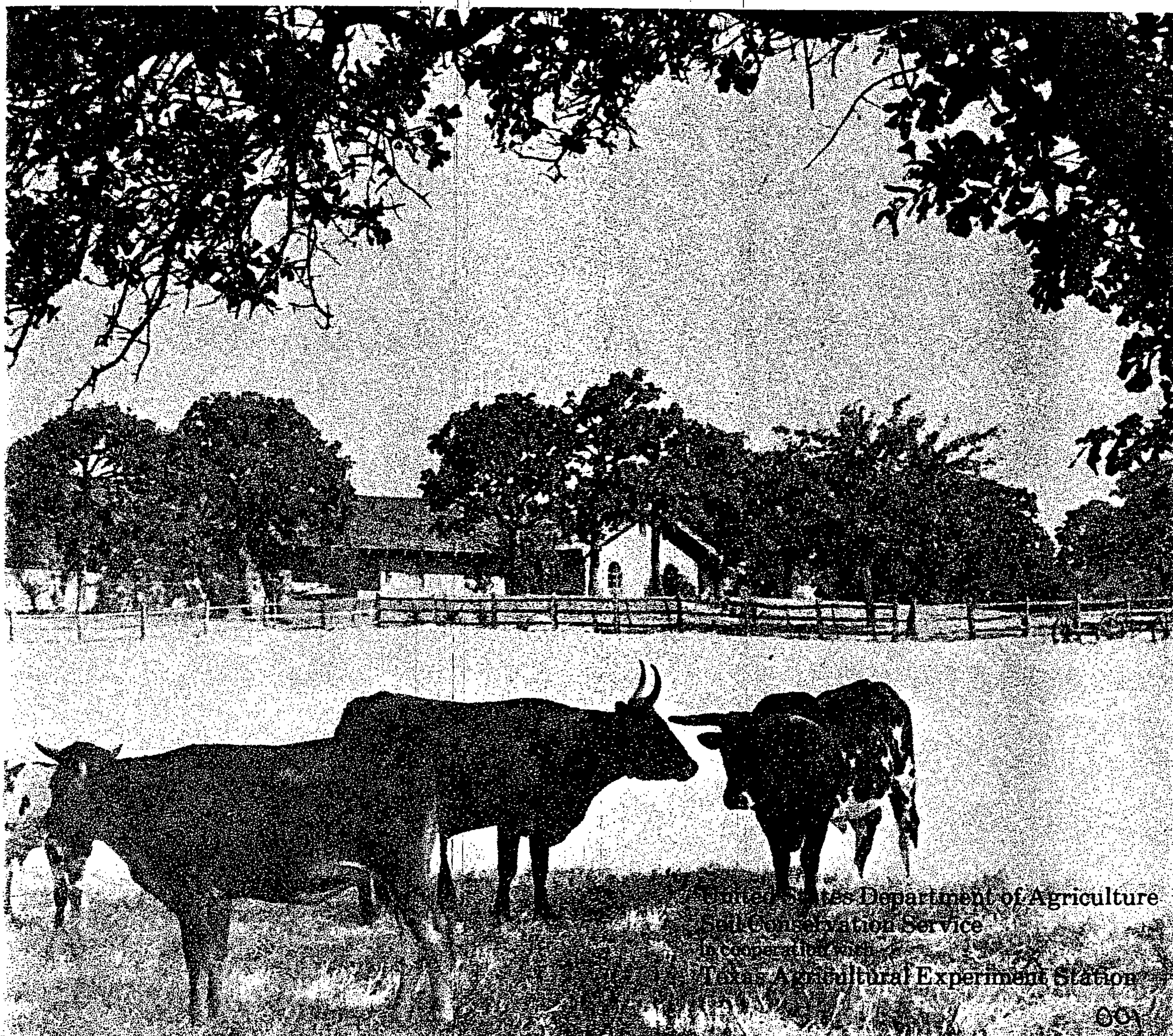
SOIL: g Organic, n Mineral

SPECIAL MODIFIERS: b *Beaver*, d *Partially Drained/Ditched*, f Farmed, h Diked/Impounded, r Artificial Substrate, s Spoil, x Excavated

Reference 21

SOIL SURVEY OF

Tarrant County, Texas



United States Department of Agriculture
Soil Conservation Service
In cooperation with
Texas Agricultural Experiment Station

contents

soil series

Issued June 1981

ng brown, yellowish brown, brownish yellow, and light brown. It is stratified clay, shale, and weakly ented sandstone. In some pedons thin layers of ny material are between the clay and the shale a. Reaction ranges from neutral to moderately line, and in some places the horizon is calcareous.

rris series

he Ferris series consists of well drained, moderately ep and deep, cyclic, clayey soils on uplands. These s formed in calcareous, clayey and shaly marine iment. Slope ranges from 2 to 12 percent.

ypical pedon of Ferris clay, 5 to 12 percent slopes; m the intersection of U.S. Highway 287 and Broad eet in the town of Mansfield, this pedon is 4.4 miles st of Broad Street and 200 feet north, in rangeland:

—0 to 7 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; moderate medium and fine blocky structure; extremely hard, very firm, very sticky and plastic; common fine and medium roots; common wormcasts; few rounded and flat siliceous pebbles 2 to 5 millimeters in diameter; common very fine concretions of calcium carbonate; calcareous; moderately alkaline; gradual wavy boundary.

C—7 to 41 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; common medium faint olive yellow (2.5Y 6/6) mottles; moderate fine and medium blocky structure; extremely hard, very firm, very sticky and plastic; few fine roots; common black concretions 1 millimeter to 4 millimeters in diameter; few siliceous pebbles 5 to 10 millimeters in diameter; few concretions and soft masses of calcium carbonate; common coarse intersecting slickensides; few cracks filled with dark grayish brown clay; calcareous; moderately alkaline; diffuse wavy boundary.

C—41 to 60 inches; yellowish brown (10YR 5/8) clay, dry and moist; many coarse distinct light gray (2.5Y 7/2) and common medium faint light yellowish brown (2.5Y 6/4) mottles; massive; extremely hard, very firm, very sticky and plastic; few fine black concretions; common shale fragments in lower part; calcareous, moderately alkaline.

The solum ranges from 34 to 60 inches in thickness. When the soil is dry, cracks 1 inch to 3 inches wide extend to a depth of more than 20 inches.

The A horizon is dark grayish brown, grayish brown, brown, olive brown, or light olive brown. When the soil is dry, pedons that have value of less than 6 and chroma of 3 or less are less than 12 inches thick in more than half of the pedon.

The AC horizon is grayish brown, light brownish gray, pale olive, or light yellowish brown. It has none to few siliceous pebbles, and few to common concretions of calcium carbonate.

The C horizon is pale brown, pale olive, light olive brown, yellowish brown, pale yellow clay or shaly clay. Many pedons are coarsely mottled in shades of brown, gray, or olive.

Frio series

The Frio series consists of well drained, deep, clayey soils on bottom lands. These soils formed in calcareous, recent alluvium. Slope ranges from 0 to 2 percent.

Typical pedon of Frio silty clay, occasionally flooded; from the intersection of Interstate Highway 35W and South Loop 820 in the city of Fort Worth, this pedon is 6.1 miles west on South Loop 820 and 200 feet north, in a flood plain of Clear Fork of the Trinity River:

A11—0 to 15 inches; very dark grayish brown (10YR 3/2) silty clay, very dark brown (10YR 2/2) moist; moderate fine and medium blocky structure; very hard, firm, sticky and plastic; common fine and medium roots; many wormcasts and channels; common fine pores; few fragments of snail shells; calcareous; moderately alkaline; gradual smooth boundary.

A12—15 to 24 inches; dark grayish brown (10YR 4/2) silty clay, very dark grayish brown (10YR 3/2) moist; moderate fine and medium blocky structure; very hard, firm, sticky and plastic; common fine and medium roots; many wormcasts and channels; common very fine pores; few fragments of snail shells; calcareous; moderately alkaline; gradual smooth boundary.

A13—24 to 34 inches; brown (10YR 4/3) silty clay loam, dark brown (10YR 3/3) moist; moderate fine medium subangular blocky structure; very hard, firm, sticky and plastic; few fine roots; common wormcasts; common fine and medium pores; few threads and films of calcium carbonate; few siliceous pebbles; few fragments of snail shells; calcareous; moderately alkaline; gradual smooth boundary.

B2—34 to 80 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; very hard, firm, sticky and plastic; few fine roots; few wormcasts; common fine and medium pores; many threads and films of calcium carbonate; few fragments of snail shells; calcareous; moderately alkaline.

The mollic epipedon ranges from 25 to 60 inches in thickness. The clay content makes up 35 to 50 percent to a depth of 40 inches. In some pedons, strata of loamy or gravelly sediment are below a depth of 30 inches. In some pedons the control section is 5 to 15 percent by volume chert and limestone gravel.

The A11, A12, and A13 horizons are very dark grayish brown, dark grayish brown, or brown.

003

The B2 horizon is dark grayish brown, brown, yellowish brown, or light yellowish brown silty clay loam, clay loam, or gravelly clay loam.

Gasil series

The Gasil series consists of well drained, deep, loamy soils on uplands. These soils formed in loamy material interbedded with sandstone. Slope ranges from 1 to 8 percent.

Typical pedon of Gasil fine sandy loam, 1 to 3 percent slopes; from the intersection of Interstate Highway 20 and U.S. Highway 287 in the town of Arlington, this pedon is 2.75 miles south on U.S. Highway 287 and 150 feet east of the east service road:

Ap—0 to 6 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular and subangular blocky structure; soft, very friable; common fine roots; few fine pebbles of ironstone; neutral; abrupt smooth boundary.

A12—6 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable; common fine roots; few fine pebbles of ironstone; neutral; clear smooth boundary.

B21t—10 to 17 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 4/4) moist; common medium faint brown (10YR 5/3) mottles; moderate coarse prismatic structure parting to weak fine subangular blocky; hard, firm; common fine and medium roots; common fine pores; common clay films on faces of prisms; few fine pebbles of ironstone; slightly acid; gradual smooth boundary.

B22t—17 to 29 inches; brownish yellow (10YR 6/6) sandy clay loam, yellowish brown (10YR 5/6) moist; common medium distinct strong brown (7.5YR 5/6) mottles; moderate coarse prismatic structure parting to weak medium subangular blocky; hard, firm; common fine roots; many fine pores; common clay films on faces of peds; few fine pebbles of ironstone; medium acid; gradual smooth boundary.

B23t—29 to 53 inches; brownish yellow (10YR 6/6) sandy clay loam, yellowish brown (10YR 5/6) moist; common medium distinct yellowish red (5YR 5/6) mottles; moderate coarse prismatic structure parting to weak medium subangular blocky; few fine roots in upper part of horizon; common clay films on faces of prisms; common black concretions and masses; few fragments of sandstone; few fine pockets of uncoated sand grains; strongly acid; gradual smooth boundary.

B24t—53 to 75 inches; brownish yellow (10YR 6/6) sandy clay loam, yellowish brown (10YR 5/6) moist; many medium distinct yellowish brown (10YR 5/4, 5/8) and common medium distinct yellowish red (5YR 5/6) mottles; moderate coarse prismatic structure parting to weak medium subangular blc common clay films on faces of prisms; many co black concretions and masses; few fragments o sandstone; few pockets of uncoated sand grains medium acid.

The solum ranges from 60 to more than 100 inche thickness. Ironstone gravel, fragments of sandstone, black concretions, and soft masses make up 0 to ab 5 percent of the solum.

The thickness of the A horizon is 6 to 19 inches. T A1 or Ap horizon is pale brown, brown, light yellowis brown, or yellowish brown. Where an A2 horizon is present, it is one to two units higher in value than th horizon. Reaction ranges slightly acid to mildly alkali

The B2t horizon is brown, strong brown, reddish yellow, light yellowish brown, brownish yellow, very p brown, yellowish brown, or yellow sandy clay loam or loam that has few to common mottles in shades of r yellow, and brown. The clay content of the upper 20 inches is 18 to 30 percent. In some pedons, gray cla flows and few pockets and streaks of uncoated sand grains are below a depth of 50 inches. Reaction ran from strongly acid to slightly acid.

Heiden series

The Heiden series consists of well drained, deep, cyclic, clayey soils on uplands. These soils formed in alkaline, marine clay and material weathered from sh Slope ranges from 1 to 5 percent.

Typical pedon of Heiden clay, 1 to 3 percent slope from the intersection of Interstate Highway 20 and F Road 157 in the town of Arlington, this pedon is 1.4 miles south on Farm Road 157, 0.3 mile east on Nat Lowe Road, and 150 feet north, in a field midway between the center of a microknoll and the center of microdepression:

Ap—0 to 5 inches; dark grayish brown (2.5Y 4/2) cla very dark grayish brown (2.5Y 3/2) moist; weak blocky structure; extremely hard, very firm; very sticky and plastic; common fine roots; few wormcasts; few fine concretions of calcium carbonate; few black concretions 1 millimeter to millimeters in diameter; few fine siliceous pebble calcareous; moderately alkaline; abrupt smooth boundary.

A12—5 to 38 inches; dark grayish brown (2.5Y 4/2) very dark grayish brown (2.5Y 3/2) moist; mode medium and coarse angular blocky structure par to moderate fine angular blocky; extremely hard, very firm, very sticky and plastic; few fine roots; wormcasts; common tilted intersecting slickensi below a depth of 16 inches; common concretion calcium carbonate; few fine black concretions 1 millimeter to 3 millimeters in diameter; few fine

004

'h area outlined on this map consists of
? than one kind of soil. The map is thus
t for general planning rather than a basis
:isions on the use of specific tracts.

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36

N

1 Mile
5000 Feet

Scale 1:20000

0 1000 2000 3000 4000 5000

(Joins sheet 29)

(Joins sheet 35)

(Joins sheet 34)

(Joins sheet 42)

006

Reference 22

Climatic Atlas of Texas

LP-192

TEXAS DEPARTMENT OF WATER RESOURCES

DECEMBER 1983

TABLE OF CONTENTS—Continued

002

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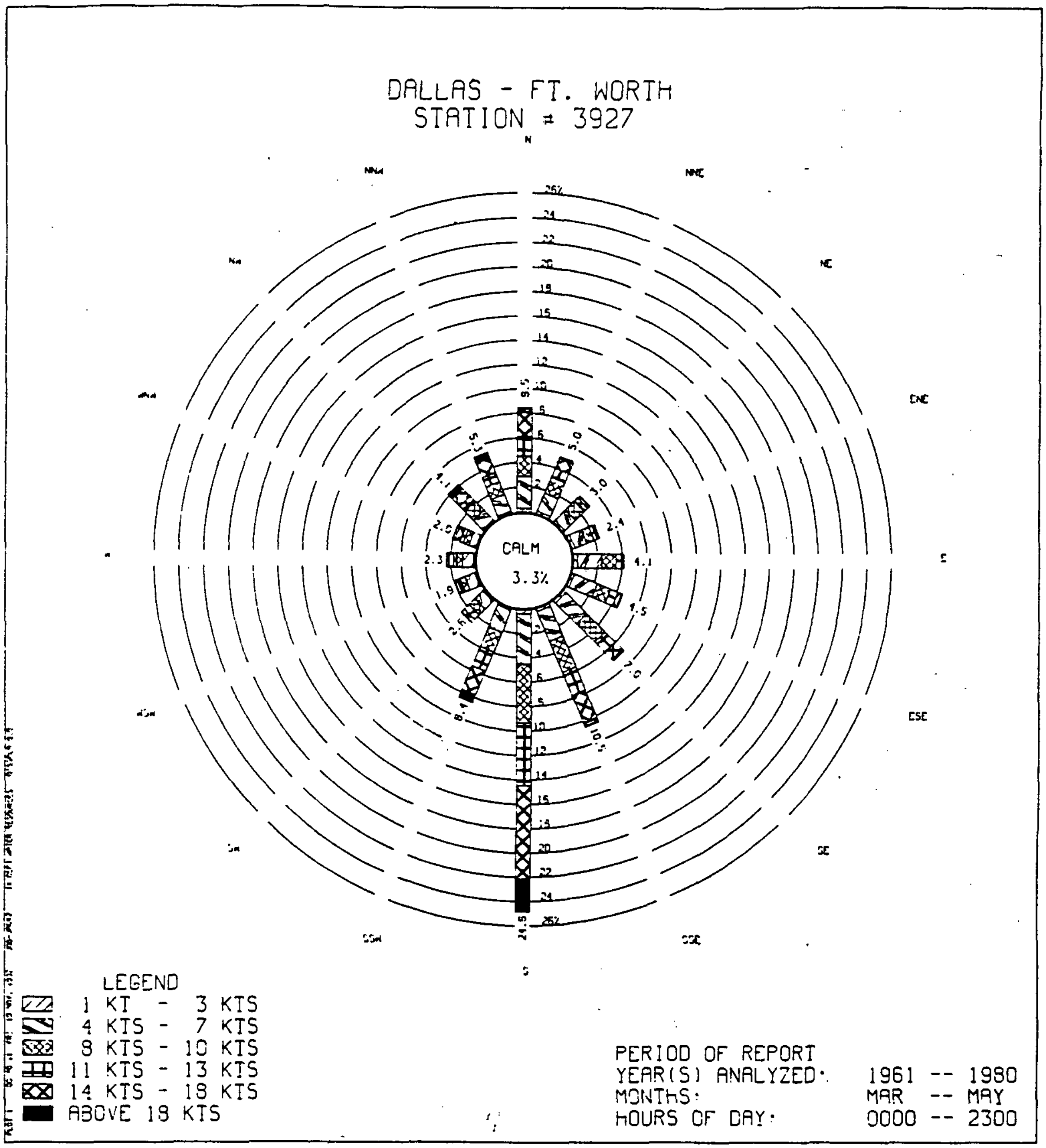
003

TABLE OF CONTENTS—Continued

WIND ROSES

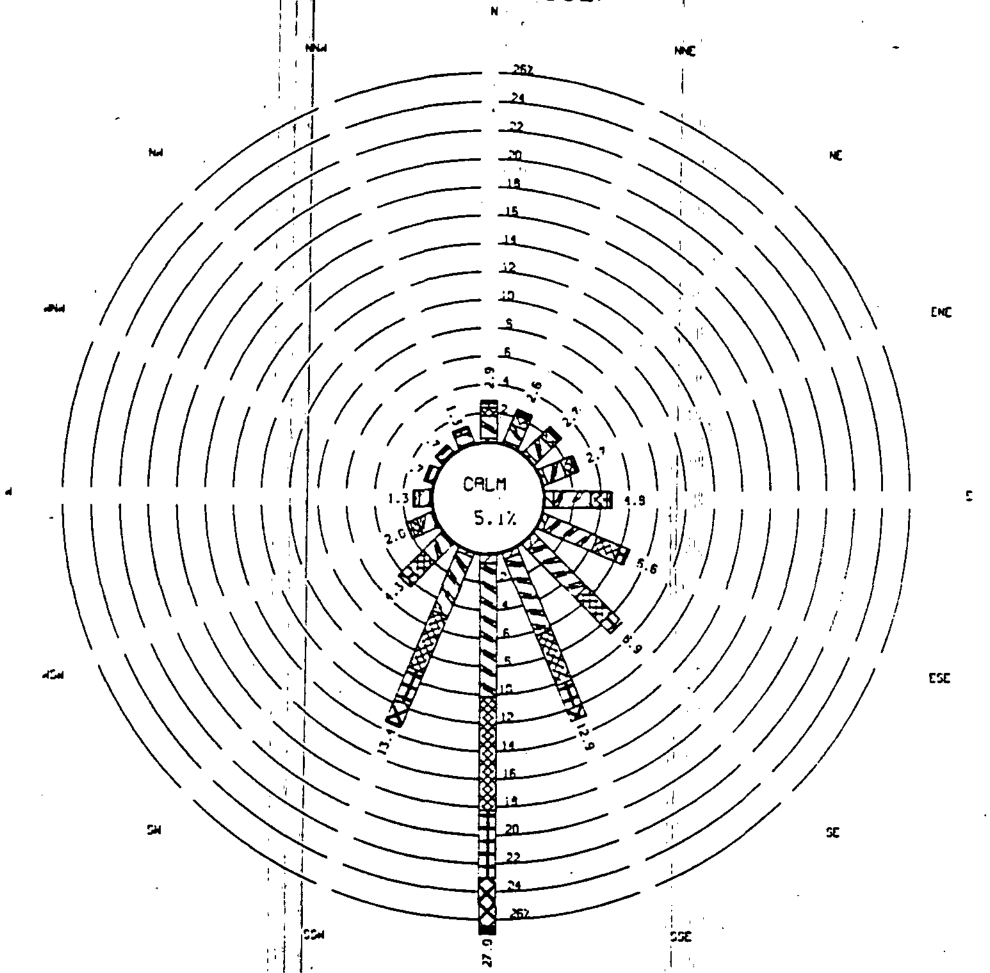
006



DALLAS - FT. WORTH
STATION # 3927
CALM
3.3%
LEGEND
1 KT - 3 KTS
4 KTS - 7 KTS
8 KTS - 10 KTS
11 KTS - 13 KTS
14 KTS - 18 KTS
ABOVE 18 KTS
PERIOD OF REPORT
YEAR(S) ANALYZED: 1961 -- 1980
MONTHS: MAR -- MAY
HOURS OF DAY: 0000 -- 2300

007

DALLAS - FT. WORTH
STATION # 3927

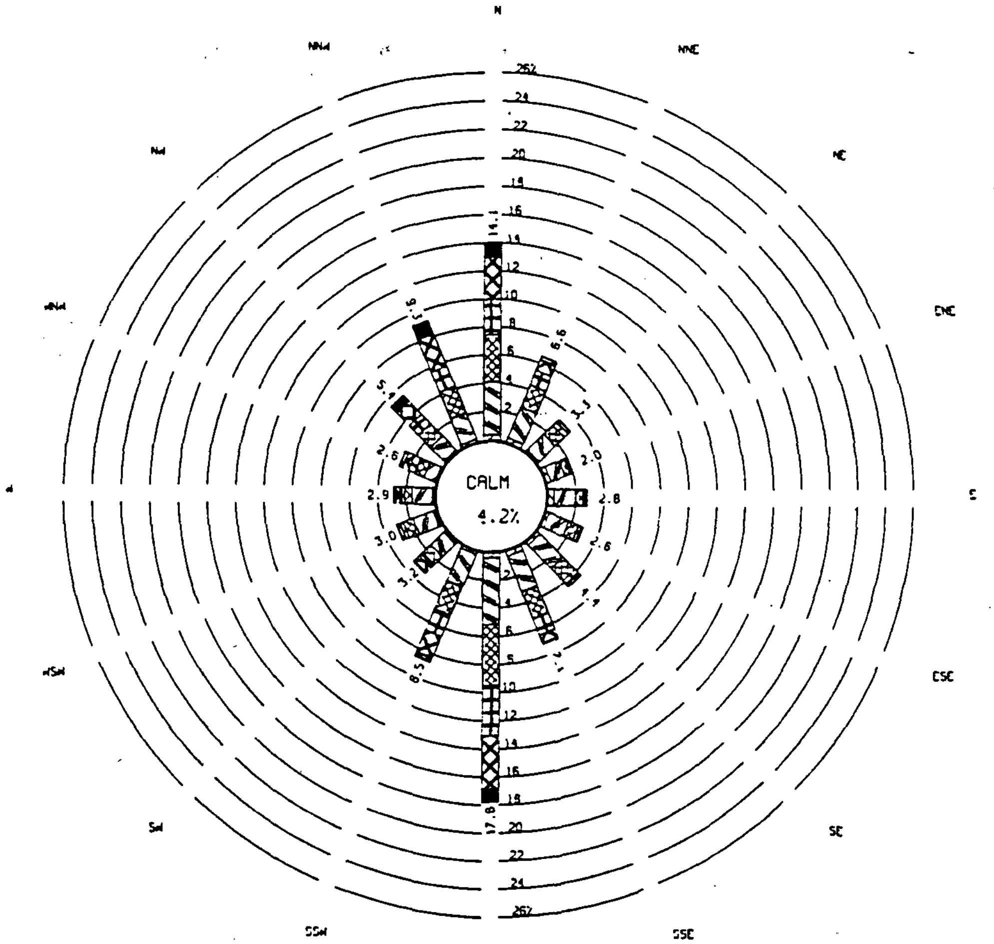


LEGEND
1 KT - 3 KTS
4 KTS - 7 KTS
8 KTS - 10 KTS
11 KTS - 13 KTS
14 KTS - 18 KTS
ABOVE 18 KTS

PERIOD OF REPORT
YEAR(S) ANALYZED· 1961 -- 1980
MONTHS· JUNE -- AUG
HOURS OF DAY· 0000 -- 2300

008

DALLAS - FT. WORTH
STATION # 3927



LEGEND
1 KT - 3 KTS
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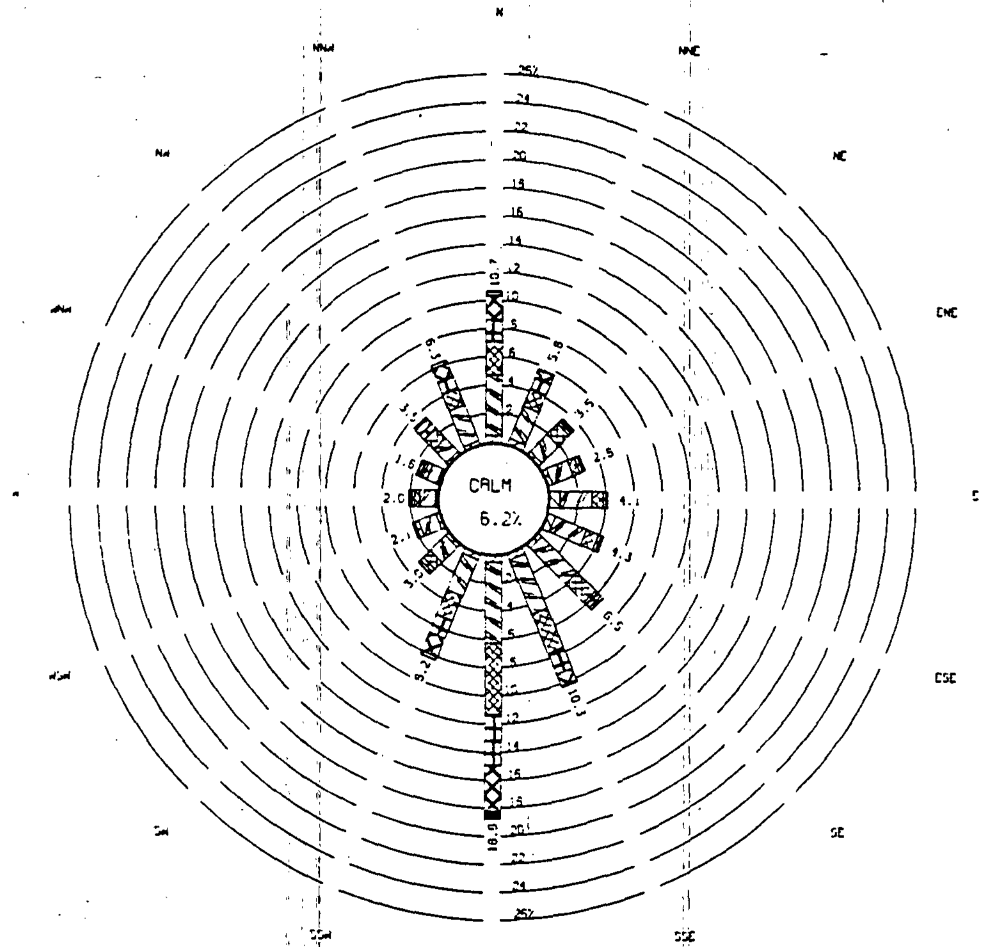
8 KTS - 10 KTS
11 KTS - 13 KTS
14 KTS - 18 KTS
ABOVE 18 KTS

PERIOD OF REPORT
YEAR(S) ANALYZED: 1961 -- 1980
MONTHS: DEC -- FEB
HOURS OF DAY: 0000 -- 2300

009

DALLAS - FT. WORTH
STATION # 3927



LEGEND
1 KT - 3 KTS
4 KTS - 7 KTS
8 KTS - 10 KTS
11 KTS - 13 KTS
14 KTS - 18 KTS
ABOVE 18 KTS

PERIOD OF REPORT
YEAR(S) ANALYZED: 1961 -- 1980
MONTHS: SEPT -- NOV
HOURS OF DAY: 0000 -- 2300

010

Reference 23

47

WATER in Environmental Planning

Thomas Dunne
University of Washington

Luna B. Leopold
University of California, Berkeley

W. H. Freeman and Company
New York

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Water in E
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"Many speci
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and valley
review the
treatment
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ground fo
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The photograph on the dust jacket, taken near Williams, Colusa County, California, shows a valley typical of the Coast Range. The sinuous ephemeral stream is incised in the alluvium forming the valley flat. The dark areas in the swales and low spots are those producing saturated overland flow. Hortonian overland flow is probably the main runoff-producing process on the steep hillslopes.
Photograph on dust jacket is copyrighted by William A. Garnett.

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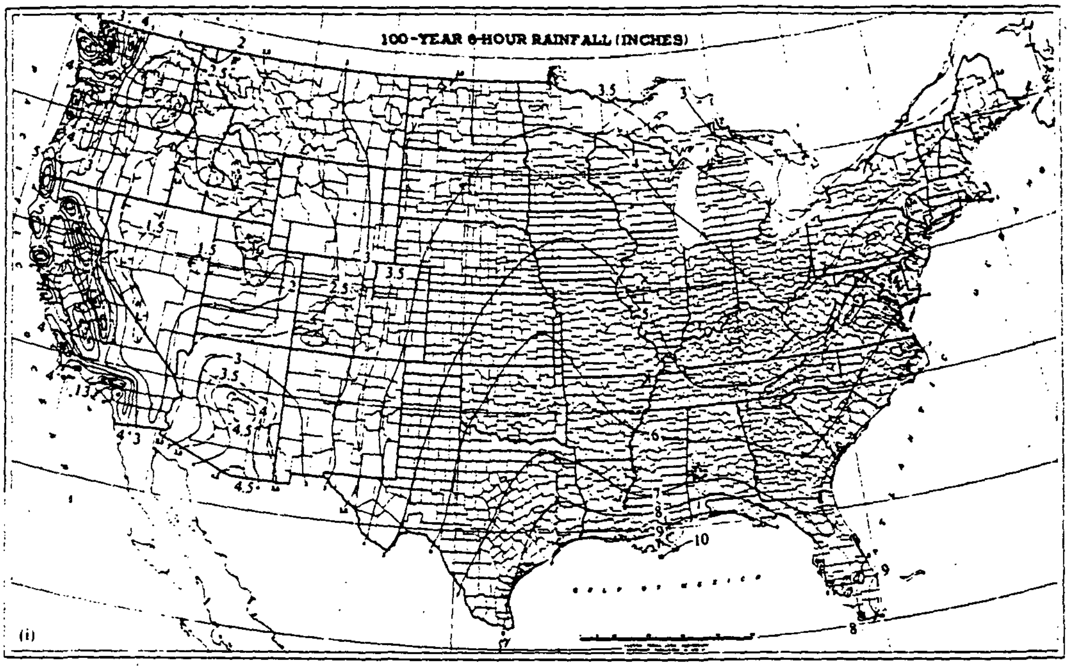
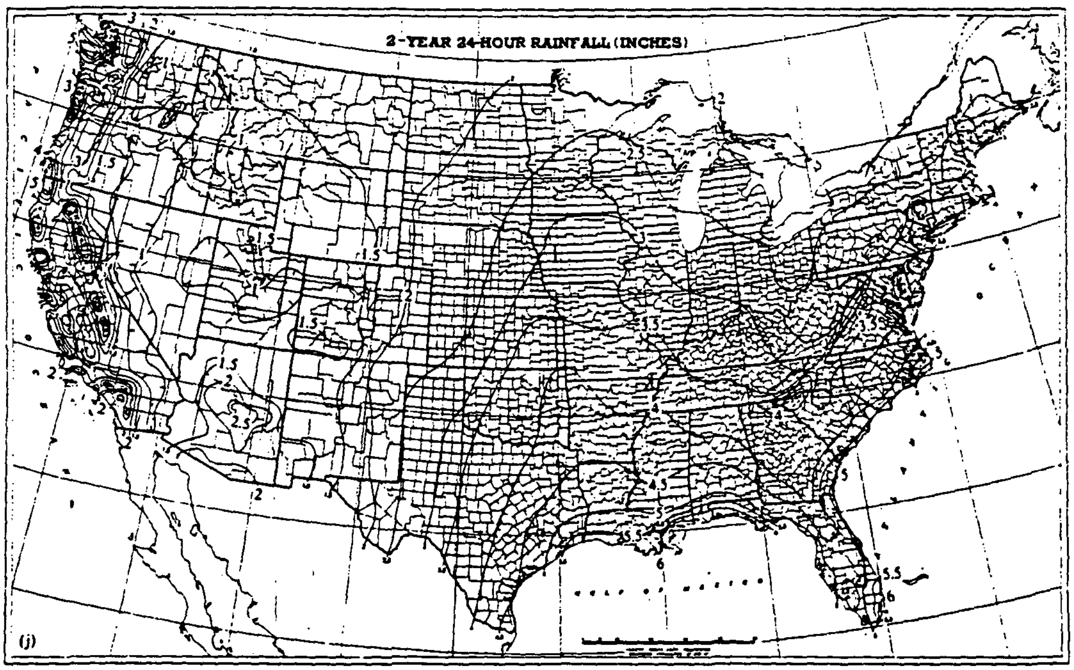

100-YEAR 6-HOUR RAINFALL (INCHES)
(i)


2-YEAR 24-HOUR RAINFALL (INCHES)
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003